We, the Max Planck Society:

a Study of Hierarchy in Germany

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I, Vita Peacock, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

This thesis explores the idiosyncratic internal hierarchy of the Max Planck Society in Germany, through which its natural scientific work is produced. Using the emic notion of a 'principle' (*Prinzip*), it articulates the presence of three hierarchical principles within the Society – the hero principle, the longevity principle, and the precarity principle – which have a range of subjective and intersubjective reality effects. Based on fifteen months of partially itinerant fieldwork at various Max Planck locations across Germany, it mobilizes testimonies, observations, virtual texts, statistics and archival data in the service of this contribution to organisational anthropology. In so doing it also performs a syncretic act which has not yet been made in this field, that is, to bring traditional anthropological studies of hierarchy – most significantly the work of Louis Dumont – to bear on a complex and technologized Western organisation. It argues that the cause of this neglect is in fact a historical product: the last forty years or so being characterized by a generalized repression in the human sciences of full consciousness of societies' hierarchical aspect, expressed most visibly in the ubiquitous use of tropes like 'agency' and 'action'. In offering a Dumontian interpretation of the Max Planck Society, this thesis thus brings the presence of social hierarchies and their respective value-ideas once more to the fore. 'We, the Max Planck Society' – a reference to Raymond Firth's Pacific islanders and betokening collective solidarity and identity – is the historical product of an alternate Teutonic vision of togetherness, which since the eighteenth-century has contradicted and opposed Western Enlightenment individualism. Germany therefore provides a good regional vantage point from which to expose obscured ethnocentrisms, and offer an alternative version of how organisations can work.

For my wonderful parents,

Jila and Andy

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Note on the text

All translations from German to English are my own. Where a text citation has been translated, I have footnoted the original German.

Acknowledgements

Firstly, I would like to thank all those with whom I interacted in the Max Planck Institutes, but particularly those who willingly gave me their time and their thoughts. In general I felt lucky to be in an ethnographic environment which sought out the human behind the researcher, and couldn't help but get a little bit caught up in all of their 'excitement'. My gratitude extends especially to R, for following my progress and supporting this curiosity of a project.

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1. Introduction

> *'There are clear divisions between the different levels in the hierarchies. It is always advisable to be aware of the status of the people you are working with and not to by-pass the individual levels in working relationships'.*[1]
>
> Living and working in Germany: a guide for international scientists at Max Planck Institutes

i) The thesis

Much like the Max Planck Society (hereafter the Society or the MPG), this thesis works through several different 'levels', each of which performs its own scholarly function in the text as a whole. First and foremost, it is an ethnographic account of some of those materially and intellectually involved in the production of natural scientific knowledge inside Germany's 'most successful research organisation'.[2] It is an account of its technical staff – those who make exquisite items of scientific equipment or do the housekeeping to ensure its laboratories whirr – of the meaning and focus they attach to their work, and the enduring quality of their bond with the Institutes.[3] It is an account of its scientists – those who perform the bulk of the organisation's intellectual labour on computers and in laboratories – whether they are bubbling with excitement or glancing nervously towards the future and what it holds. It is lastly (but naturally by no means least) an account of its directors – those modern 'monarchs of science' tasked with leading their Institutes to glory both inside the organisation and out – of the creativity they inject into such a task, and the anxiety such a weight of authority brings with it. But mostly it is an account of how the whole thing hangs together, of how the organisation makes sense to itself, of its logic.

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1 www.mpg.de/4311252/Living_working_Germany.pdf

2 http://www.mpg.de/183251/portrait

3 I have capitalized 'Institutes' throughout, as they are all abbreviations of proper nouns: each Institute bearing its own unique title.

This thesis is secondly an analytical statement: that the Max Planck Society is a profoundly hierarchical organisation. Ascribing it the status of hierarchy as theorized by Louis Dumont (1980), rather than the alternatives of stratification or a system of purely political inequality, is to reposition the locus of value. In a hierarchical society, value rains down on all subjects from the skies of the whole, rather than sprouting upwards from spontaneous exchange relationships. For Dumont, hierarchy and value are basically synonymous; one is the pre-condition for the other. As he says in his most famous work, *Homo Hierarchicus*, 'To adopt a value is to introduce hierarchy' (1980: 20).[4] My focus is consequently not on the intra-mural life of this organisation as an *immanent* process, in which selves are continually coming into being in the tradition of modern liberal self-fashioning, but on the *inheritance* of a particular architecture of value which produces persons at the scale of the whole.[5]

Thirdly, it is a critical project. In repositioning value in this way, I buck a long trend in the anthropology and sociology of organisations which could be traced back to Max Weber and his emphasis on 'social action' (Runciman 1993: 7).[6] This trend, which will be traced in the literature below, asserts that the members of organisations come to exist and to operate inside them by virtue of their own 'agency' or 'action', within a social environment of inexhaustible emergence. However, despite his genius I by no means hold Weber singularly responsible for the expansive entrenchment of his viewpoint. The rupture between 'thought' and 'act', as Dumont says elsewhere, is a key tenet of 'modern ideology' (1986: 233): one which makes possible the action-oriented event of commodity exchange, and, perhaps more importantly, gets a shot in the arm therefrom. As Marx says quoting Goethe's Faust, '*Im Anfang war die That*' (in the beginning was the deed) (1995: 52). Thus I link the tendency within the study

4 As André Iteanu notes, in later writings Dumont attempts to abandon the unpopular idiom of hierarchy for the less contentious one of value (2013). Although Dumont's change of language invites confusion, for Iteanu, the two remain 'inseparable' (2013: 156).

5 Marcel Mauss is credited as the first to develop the idea of the 'person' (1985), distinct from the individual as such, in being the conceptual product of a society. Dumont was greatly influenced by Mauss and accepts and develops this Maussian premise in his own work.

6 Paradoxically I will be harnessing Weber to the service of my alternative strategy, being the first to elucidate certain elementary principles of 'charismatic authority' (1978).

of organisations to focus upon action at the expense of thought, to the epistemological sublimation of a particular moment of late capitalism, which attacks all forms of value obstructing the practice of 'equivalence' (ibid). I trace this within the social sciences, as (somewhat ironically) beginning with the '68 social critique, one which has been dispersed and reproduced through the wide application of post-'68 social theory.

The closest scholarly allegiance to the task I am undertaking here, is to be found in a small and little-known but extremely powerful book, edited by Bruce Kapferer and entitled *The Retreat of the Social: The rise and rise of reductionism* (2005), with contributions from Jonathan Friedman, André Iteanu, Roger Just and others.[7] It deals as a whole with the prevailing tendency within anthropology to deny supra-personal concepts such as society and culture, while aggrandizing the significance of a strong subjectivity in their stead (also cf. Holbraad 2010). Yet such reorientations suffer from a misplaced concreteness, as they often fail to recognize that this subjectivity is just as abstract as its alternatives. Kapferer cites Eric Wolf to bring this point home. 'The abstract individual is merely another monad, a timeless reified essence like the conceptual entity it is supposed to criticize and oppose' (2001: 333). Shifting the emphasis from society/culture to individuals thus does not really help us much, or at least only if it is acknowledged that both lie on the same conceptual continuum.

However increasingly such acknowledgement appears to be lacking. This 'abstract individual' then, is similarly the object of my critique. It is Dumont's relentless comparativism that enables him to trace some of the shadow puppets of 'modern ideology' (cf. 1977, 1986, 1994), and it could be argued that the decline of comparison within the anthropological project, and its substitution for philosophism as the work of abstraction, has imprisoned anthropologists and other social scientists within an ideological cell the walls of which they cannot see.[8] As

7 It is probably not incidental that many of these scholars –most notably Kapferer (cf. 1998) – have themselves been clearly influenced by Dumontian scholarship.

8 As Dumont himself notes, 'Comparative social science can throw light on those questions philosophers neglect' (1977: 11). I am thinking here of studies with a genuinely comparative ambition, not simply a collection of case studies with a unifying theoretical premise. A good example of this is Bloch and Parry's exploration of money

Rio and Smedal note with some unease, 'It is becoming harder and harder for anthropology to conceive of sociality beyond interaction and individuality' (2009: 34). The study of organisations has been a particular locus for this, possibly because it has always been an interdisciplinary endeavour. All of the debates in this field surrounding the 'agency' and 'action' of individuals, as I will go on to argue, merely cloak the spawn of a particular modern ideology in the garb of an apparently innocent materialism. I never found such an individual inside the Max Planck Society, but instead others which were different: close siblings, but different.

Fourthly, the thesis is a contribution to the anthropology of Germany. In this era of intellectual surplus, any account of 'the literature' cannot pretend to be anything other than partial; nevertheless there are certain noticeable themes that spring forward. In the early years of the discipline, Germany – in comparison to other regions – was always 'a rather neglected area of study' (Norman 1991: 2). Nazism had put 'its dismal mark on everything German' (ibid: 3) and the 1950s gave rise to a handful of national character studies (Lowie 1954, Rodnick 1948) which could not escape such a legacy. Thereafter the ambitions became more modest: a spate of village studies confronted the sub-cultural themes of religion, education, and identity (Golde 1975, Spindler 1973, Warren 1967), a tradition continued by Norman (1991) and Berdahl (1999). Presumably the result of both changing scholarly priorities, and the processes of urbanization which made villages larger or eradicated them altogether, is that village studies have since been largely usurped by studies of towns and cities (Borneman 1992, Ringel 2012, Weszkalnys 2010). Of course the latter are also steeped in that historical epoch when Germany suddenly became much more interesting to anthropologists: Postsocialism (Baer 1998, Berdahl 2010, Boyer 2005). Today there are also other recognizable strands of scholarly interest which have surfaced, namely: the experiences of first or second-generation migrants in Germany (Goldak 1997, Mandel 2008, Ostermann 2010, Weißköppel 2009) and its lively culture of environmental activism (Berglund 1998, Krauss 2009). To my knowledge there has never been a study of an organisation in Germany, making this thesis an

(1989). It should be said that my argument applies particularly to the Anglo-American sphere. French anthropology still in part maintains the comparative ambition Dumont promoted.

original intervention of a sort. However, the organisation is just another way of drawing the ethnographic whole (Otto and Bubandt 2010: 3-5), and as such finds its precedents in those village studies: a local site, which concentrates and reproduces big ideas about what it means to be a person in the cultural context of Germany.

This thesis is also an effort to reconnect with an older kind of anthropology. The title 'We, The Max Planck Society' is a deliberately provocative reference to Raymond Firth's *We, the Tikopia* (1957): one of the discipline's early classics. My critique of the post-'68 paradigm which fed and bled into postmodernism is thus expressed not simply in the form of a cursory literature review, but in the whole attitude I adopt, which looks to earlier decades for inspiration. Rather than a story of endless complexity, I aim instead for a certain kind of modernist simplicity in formulating a triumvirate of principles. Rather than turning the inherently partial nature of ethnography into an analytic conceit, I attempt to present a more complete picture of the internal logics governing a community. Rather than beginning with the diverse lives of individuals and ending with some kind of abstracted argument therefrom, individual testimonies only erupt from within the confines of a larger argument. And rather than ending the story with some statement about cultural particularism, I use the Max Planck Society's particularisms to think comparatively (and vice versa). However it is in this final approach that I ultimately part company with Firth and his path-breaking contemporaries. By repatriating debates about non-Western forms of hierarchy and leadership back into Europe, I take a decidedly twenty-first century turn: transgressing the boundary between the West and the 'Rest' that they – and Dumont in their wake – were so invested in.

Yet a re-imagining of *We, the Tikopia* suits my purposes in other ways. Firth's decision to appropriate this indigenous turn of phrase into his title was the result of its ability to capture something of the essence of Tikopian thought: what he calls 'that community of interest, that self-consciousness, that strongly marked individuality…which they prize so highly' (1957: xxi). The Max Planck Society exhibits similar traits: a self-awareness, an exceptionalism, but most importantly, an analogous emphasis on the 'we'. It is this dominating 'we-principle' – if you

like – which sets the Society apart from other organisations of its kind. It is not the energetically manufactured collective identity of a for-profit corporation, but one particular brushstroke of a philosophical tint which still colours German society at large: the importance of being a member of a collective. A German technology company recently launched a competitor to Apple's iPad called the 'WePad'.

Finally, any outline of what a thesis *is*, must be forthcoming about what it is *not*. This is emphatically *not* a study of those Max Planck Institutes oriented towards the humanities and social sciences. Although members of the Institutes in those disciplines may see some of my arguments as transferable beyond their original empirical referent, there is no question that the relations of knowledge production in the human sciences are qualitatively different from their counterparts in the natural sciences. By and large, the latter require far greater social collaboration and – particularly in experimental science – divisions of labour. I likewise do not examine the administrative side of the Max Planck Society: whether librarians, the director's personal assistants, or those situated in the administrative offices. However my general impression is that being for the most part permanent, German, and gender-segregated, as persons they are commensurable to the technical staff. Furthermore, despite exploring the relations of natural scientific knowledge production, this is *not* a thesis about scientific epistemology. The subject already has screeds of scholarship devoted to it (the highlights being Daston and Galison (2007), Latour and Woolgar (1979), and Traweek (1988)) and it is not my intention to expand it further. Finally, it is important to be clear that I am not staking any kind of *moral* claim on how the organisation functions: whether it 'works' or 'does not work', whether its hierarchy is a positive or negative thing. I do however, endeavour to give voice to a broad spectrum of human experience within it. If my readers from the Max Planck Society wish to draw moral conclusions from this experience, that is their right.

ii) The negation of hierarchy

Much like Physicist Niels Bohr's philosophical revelation about a scientist's relationship to nature, it must be said from the outset that anthropologists are part of the culture 'they seek to understand' (Barad 2007: 26). By this I mean that anthropologists and social scientists more generally have been exposed to certain social and political currents over the last fifty years, and that this has had certain ramifications on the direction of their epistemological concerns. One significant current, which has been running for many years now, is the negation of hierarchy in the West as a socially-acceptable moral order. This negation has had a range of consequences for the study of organisations, and is one this study itself seeks to negate: a double negative to make way for the positive reinstatement of hierarchy as an analytic concept in this field.

The perceived oppressiveness of formal hierarchies was one of the major social critiques that drove the 1968 student/worker revolts across Europe and America.[9] As Luc Boltanski says, in his influential study of how the rhetoric of '68 became incorporated into management discourses of the 80s and 90s, 'In the sphere of work and production...the dominant themes were denunciation of "hierarchical power", paternalism, authoritarianism, compulsory work schedules, prescribed tasks...and more generally, the division of labour' (2005: 170). Yet it was not just management which fully absorbed the '68 critique in the years thereafter. The 'denunciation', or in my terms, negation of hierarchy, subsequently reverberated in very powerful and not-always-conscious ways throughout the humanities and social sciences. This reverberation is most clearly visible in the social theories of French scholars such as Michel Foucault, Pierre Bourdieu, and Gilles Deleuze, whose texts went on to play a profound role in the philosophical turn in anthropology.

However at a more subterranean level, one can trace a trend towards the negation, or at least unprecedented critique of hierarchy, among the research

9 I am not including the '68 protests across the member states of the Soviet Union which had a different gamut of critiques.

articles which began to appear in the 80s and 90s.[10] The general tenor is of the inadequacy of hierarchy as an explanatory model for human behavior.[11] Among those who attack hierarchy modestly, the emphasis is on its 'limits' (Marcus 1975; Appadurai 1988; Mosko 1994). While for many others, the focus is on how hierarchy is reciprocally bound to notions of 'equality' which undermine it (Bloch 1981; Harrison 1985; Trigger 1988; Howe 1989; Boehm 1993; Parkin 1994). For a minority, hierarchy is rendered altogether useless, almost *evil*. Like a military opponent, there is an 'alliance against' it (Graham 1994) and it is 'defeat(ed)' (Mitchell 1988); it becomes 'dismantl(ed)' (Young 1994) and 'distintegrat(es)' (Thomas 1988). The reader should be aware that I am not suggesting an ideological conspiracy here, but simply highlighting one cluster among the routine borrowings and echoes which give form to the development of any academic discipline.

As Donna Haraway demonstrates for the biological sciences, paradigm shifts in collective thought are often (if not always) escorted by changes of metaphor (1976). This is certainly so for hierarchy's negation, as new images of heterarchy have arrived in recent years to preside over our collective visual imaginations. The three most significant of these are the rhizome, the fractal, and the actor-network, which I will briefly sketch in sequence.

Deleuze and Guattari introduce the image of the 'rhizome' in their landmark work *A thousand plateaus: capitalism and schizophrenia* (1987). A rhizome is a biological term for a root plant usually found underground (like ginger or turmeric), which grows outwards from a potentially infinite number of nodal points, reproducing itself vegetatively as ruptured segments can themselves continue growing. Indeed these authors are the most explicit of all about the attachment of metaphors to thought-paradigms (and thus their attack on hierarchy), as through the rhizome they arm themselves to engage in tropic warfare against the 'root-tree' (ibid: 16) signaling the hierarchical paradigms of

10 The argument I am making here is not a totalizing one; the trend towards negation runs alongside a 'business-as-usual' treatment of hierarchy by other scholars.

11 These patterns in the literature have been tracked by means of a keyword search entered into the 'Anthropological Index Online', based on the journal collections of the Royal Anthropological Institute.

earlier epochs. 'We're tired of trees. We should stop believing in trees…They've made us suffer too much', they lament (ibid: 17). The rhizome as its image-adversary is defined by many things: the most significant for us being its 'flat' as opposed to vertical dimensionality (ibid: 9); its potential for infinite connectivity as opposed to being fenced in by borders and ruptures; and its lack of central growth principle, unlike the tree it possesses no 'pivot-unity' (ibid: 9) ordering the relationships between and wholes.[12] It should also be noted – as this is a common tendency among theorists of heterarchy – that the rhizomic alternative is presented as the more just and human-oriented of the two.[13] The tree is 'not a method for the people' (ibid, 8).

The fractal is another biological metaphor which performs hierarchy's negation. An idea first conceived of by Benoit Mandelbrot (1983), and occurring in both natural and cultural phenomena (Eglash 1999), fractals are very simply the reappearance of similar shape patterns at different scales. The introduction of the fractal metaphor into anthropology comes from ethnographies of Melanesia (Strathern 1991; Wagner 1991), a good regional vantage-point from which to negate hierarchy, as like Europe and America, its dominant ideology is one of egalitarianism (Robbins 1994). In any event, the fractal, like the rhizome, is again an effort to reconfigure the relations between parts and wholes. Except, where the rhizome thrives on multiplicity and open borders, is in essence the anti-whole, the fractal is instead a 'holon' (Koestler 1967): both part and whole together. What they share however is the absence of a pivot-unity: a superordinate holistic logic determining the interrelationships of parts.[14] Instead the fractal, in the iterability of its proportions at different scales, instantiates its own ordering principle, the ultimate Melanesian value-idea: the relation.[15]

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12 This pivot-unity is synonymous with Dumont's 'pre-eminent value-idea' that we will encounter in full in Chapter 3.

13 See Chapter 6 and Conclusion for data and analysis which controverts this powerful and insidious myth.

14 As Wagner states, 'A holographic or self-scaling form thus differs from a social organisation or a cultural ideology in that it is not imposed so as to order and organize, explain or interpret, a set of disparate elements' (1991: 166). Strathern says something similar (1991: xx).

15 Robbins (1994), in an endeavour towards a 'Dumontian anthropology', looks for the pre-eminent value-idea in Melanesian society. He argues (the point at which I concur) that Dumont's confusion over whether he believed 'equality' or the 'individual' to be the ultimate value of Western societies should be cleared up: it clearly is the individual. This then gives Robbins the opportunity to argue that in Melanesia the ultimate value is equality.

Finally we arrive at the 'actor-network', an idea which takes inspiration from the rhizome (principally the notion of assemblage), yet neglects its poetry, being a mechanist-materialist vision. Unlike the previous metaphors, the actor-network is not borrowed from the natural sciences but is a conceptual invention of several social scientists (Michael Callon, John Law et. al.). If an actor-network betokens a particular shape of sociality, what then does it look like? There is an enormous literature on actor-network theory, but for the sake of brevity I will go straight to its godfather, Bruno Latour, and his definitive text on the subject (2005). The key thing is that the landscape within which actor-networks flourish is completely 'flat', therefore participating with both rhizome and fractal in hierarchy's negation (the absence of a pivot-unity).[16] Latour uses the word throughout the text, even making reference to 'the metaphor of a flatland' to picture the landscape he sees (ibid: 220).[17] However unlike the rhizome and the fractal, this flatland is completely without colour. It is 'negative', 'empty' and 'blank' (ibid: 221): total nothingness. Onto this white void one then overlays a 'grid', of which the intersections are constituted by actors which are either human or non-human, forming a 'star-like shape' (ibid: 221-2). This star will look slightly different from each one of its actor-nodes, depending on which one the social scientist is pursuing.

It is significant that the non-human actors Latour has focused on throughout his corpus (cf. 1979, 1990, 2010) are technologies of commensuration – documents, forms, money, standards, quasi-standards and scientific instruments. The actor-network is forged through sameness, not difference, and it is here we rub up against the object of both mine and Kapferer's chagrin: the abstract individual. Latour stakes his stance on subjectivity in no uncertain terms when saying, 'The circulation of quasi-standards allow anonymous and isolated agencies to slowly become, layer after layer, comparable and commensurable –

However, I feel Robbins is falling for the same trap as Dumont. Both societies share equality as the underlying basis for relationships; however, in Melanesia the value in which relationships are then configured is, following the work of Marilyn Strathern, not equality but the relation.

16 See Kapferer (2010) for a trenchant critique of Latourian ontology.

17 Dumont actually presupposed this intellectual development many years earlier. He identified flatness explicitly as a key expression of modern ideology, in which 'a previous hierarchical universe has fanned out into a collection of flat views' (1986: 249).

which is surely a large part of what we mean by being human' (emphasis added, ibid: 230).

To briefly recap then: the negation of hierarchy in the last forty years is traceable through the popularity of certain kinds of social theory, in the language used and arguments made in research articles of the 80s and 90s, and in the appearance of new heterarchical imagery. Nevertheless there is one final manner in which a powerful opposition to hierarchy has been made manifest: the treatment of Dumont himself. Rio and Smedal in their overview of his work enter what they call, 'the highly charged field populated by the allies and enemies of this controversial figure' (2009: 1).[18] Yet why *is* it so highly charged? Yes, Dumont can make rather grandiose and sometimes too-simple statements, but the bile he has inspired does not quite seem proportionate to the crime. I cannot help but deduce that Dumont has in some senses become a cipher for Western attitudes towards hierarchy. Why else did his 'symbolic capital' in some quarters always remain scathingly low (Bourdieu 1990), and plummet like a stone in many others after his departure from academia? As Jonathan Friedman reports, even the groups who had been associated with him became 'marginalized' when he left (2012).[19] Dumont, as a metonym for hierarchy itself, could never be adopted by the mainstream, because in society at large hierarchical ideology was being progressively substituted for a 'triumphant' economic alternative which requires individualism to sustain itself (Dumont 1977).[20]

At this point then, I reach the sting in the tail. If, as cited at the outset, 'to adopt a value is to introduce hierarchy', by the same logic to abandon hierarchy is

18 One of these is David Graeber, who opposes Dumont's arguments about hierarchy at least partly on moral grounds. He states – after ostensibly agreeing with Dumont – 'Still, the political implications are, as so often in his work, profoundly unsettling' (2007: 47).

19 At the same conference panel session Richard Handler also linked the framing of 'hierarchy as pathology' to a form of cultural imperialism which becomes enacted through the rhetoric of 'development' in the non-Western world (2012). This raises another interesting paradox, that exactly simultaneous with the rise of post-colonial theory, colonialism was in fact extending its reach through the symbolic violence directed towards non-Western hierarchical forms.

20 Joel Robbins expresses a casual surprise that what he calls a 'Dumontian anthropology…has neither been fully codified or institutionalized as yet' (1994: 25). However, in my analysis this neglect has been no simple accident or happenstance.

to negate this self-same value and the role it plays. Indeed this is what all of the metaphors of heterarchy share, possessing no superordinating logic to determine the interrelationship of parts. It is therefore impossible not to see the historical trajectory of hierarchy's negation as running parallel with the intensification of a particular exchange relationship which also negates this kind of value: that of the commodity-form. Many have debated over whether this intensification should be periodized as Neoliberalism, yet for our purposes its nomenclature is irrelevant.[21] What is unequivocal is that the period after 1968 inaugurated a strengthening of capital relative to labour, and the entrance of the commodity-form into arenas of social exchange which had previously fallen beyond its purview.

It will now be necessary to return to some of Marx's most elementary statements on the subject, to explain what I mean by negating hierarchical value, and conclude the narrative I am drawing here. Negating value does not imply abandoning a value concept altogether, but it does mean abandoning the value that emanates from a hierarchy, that which as I have said, 'rains down on all subjects from the skies of the whole', such as the purity value-idea of Hindu caste (Dumont 1980). As Marx says, the only form in which 'the value of commodities can manifest itself or be expressed' is exchange-value (2008: 15). For the commodity-form to work, all competing forms of value must be annihilated (like hierarchy) to make way for the production of exchange-value. The latter arrives at itself *through* actions and transactions rather than – like hierarchical value – prefiguring them. Critically, exchange-value also rests on the ability to commensurate the commodities concerned. One part is equivalent to another (both parts thus forgetting the wholes out of which they were formed): as in Marx's famous example, '20 yards of linen' may be deemed to be worth 'one coat' (ibid: 23).

Yet this equation, 20 yards linen = one coat, also implicates another hidden logic which impacts upon my analysis of Max Planck employees: that of human labour. In commensurating the value of commodities, one is also

21 The 2012 'Group for Debates in Anthropological Theory' – held annually at Manchester University – had the topic: 'The concept of neoliberalism has become an obstacle to the anthropological understanding of the twenty-first century'.

commensurating the value of the human labour which produced them. Through these practices of equivalence labour becomes 'abstract' rather than situated (ibid: 47-8), and undifferentiated rather than qualitatively alter. The story of capitalistic modernity is thus not as Durkheim would have it, one of 'The *division* of labour in society' (1997), but of its increasing uniformity. The more we invite the commodity-form into our lives, the more its hidden logic of abstract labour, thus of the 'abstract individual', plays itself out in our ontologies. At this point one might begin to look askance at Latour's statement on subjectivity, that to be 'comparable and commensurable' is to be human, because it turns a specific practice into statement of universality. If we now consider the quotation drawn from the Max Planck handbook which begins this thesis, we can see the careful logic of differentiation which is being laid down here. This is not a collection of 'abstract individuals'. Instead there are 'clear divisions between the different levels in the hierarchies': each one rendering, at the scale of the whole, a different kind of person.

iii) Consequences of this negation for the study of organisations

If the house that hierarchy built has been razed to the ground to make way for a jostling open-air market of spontaneous exchange relationships, then there are, following these final references to Marx, two symmetrical consequences for the study of organisations which proceed logically therefrom. These take the form of theoretical assumptions in the literature. The first is that the internal social life of organisations must be continually 'produced' by actors in order to have any coherence or meaning at all; and the second is that the actors concerned are fundamentally commensurable with one another. I shall now address both of these in turn.

Without hierarchy, any supra-personal entity which manifests itself must be actively manufactured by those actors it encompasses. This finds expression in all of the uses of the term 'agency', 'action', and 'practice' which began to appear

in the 80s and 90s.[22] However, it is important to remember that such action-based approaches were nurtured throughout the twentieth-century under the wing of 'structure' (Parsons 1968; Bourdieu 1977; Giddens 1984), born of its inadequacy when attempting to theorize social change. It is only relatively recently in fact, that action has grown up and out of the structure which gave birth to it, and, like an angry and rebellious teenager, rejected the existence of its parent-concept completely.

This recent shift towards the primacy of action is most visible in those who have been influenced by network analysis: whether 'actor-network theory' (Latour 2010; Law 1994), 'action nets' (Czarniawska 2008) or simply the concept of a 'network' (Riles 2000). It is also present in those organisational studies which ride on the theories of Foucault and Bourdieu and their visions of the interminable 'production' of social life (Born 1995; Kunda 1992; Zaloom 2006). In Zaloom's analysis of financiers in London and New York, her research participants are doing so much creative fashioning of culture and self that she takes to calling them 'designers' (2006: 177).

At this point the reader might start to raise an eyebrow. Doubts begin to assert themselves. 'Does the hierarchy of the Max Planck Society not *also* have to be produced? Are you implying the presence of some kind of Platonic essence floating down through time?' To this I would respond quite happily that no-one inside the Max Planck Society is producing its hierarchy. The hierarchy is already there and has been for some while. It simply has to be *maintained,* which is done relatively easily, through simple cues like the one with which this chapter began.

There is another sub-strand within action-based approaches that also deserves a cursory mention in its relation to hierarchy: those which have taken up Appadurai et al.'s injunction to follow the 'social life of things' (1986). The material turn has by and large been an insightful and important one for the study of organisations, jam-packed with material culture as they are. However it does have certain analytical dangers which I would like to raise here. If one is

22 For the sake of simplicity I will take 'action' as an umbrella-term for these three very similar ideas.

following an artefact through each stage of its life inside the organisation, often being altered in some way in the process, then it will probably look as if each human encounter with the artefact has played an equally decisive role in its 'construction'. There are lots of examples of this (cf. Latour and Woolgar 1979; Latour 2010) but a particularly revealing one comes from Richard Harper's study of the 'careers' of staff reports inside the International Monetary Fund (1998). He conceptualizes each stage of this career as 'part of a plenum that reaches its final production with the acceptance of the report by the board' (ibid: 285). However, having been denied access to the meetings of these Executive Directors, he has no evidence to show how the report is indeed treated in the final stage of its career.[23] In conceiving of the Fund as a 'literary organisation' (ibid: 233), obsessed with its texts, he denies the hierarchy which makes some interactions with texts of greater consequence than others. Likewise Latour and Woolgar's argument that scientific facts are made through a cumulative 'slow practical craftwork' (1979: 236) would never hold water inside the Max Planck Society. The primary point of departure here is not the material but the ideal; it is first and foremost a director's 'vision' which determines what scientific facts will be constructed and how.

This leads me to the second consequence I diagnose; all of this emphasis on the *product* of action has displaced one on the *subject* of action. If social meaning can only be made through practices, then logically the person doing the practicing is without prior meaning, effectively without culture. This is the abstract individual about which Kapferer and his co-authors are so vexed, the idea that someone, could in fact be, 'anyone' (Rapport 2012).[24] Accepting that someone could be anyone is to argue for their fundamental commensurability. This is a pardonable assumption among natural scientists, who concern themselves with the biological body, but not for social scientists, who deal with its particular social location. I follow Dumont in stressing the need to dissociate the individual as a biological unit, from the individual as a conceptual unit.

23 One of his participants even suggests that sometimes the Fund's decision-making about action in member countries is 'not about the report' but international relations between governments (1998: 252).

24 Incidentally, Rapport is a recurring reference-point in Kapferer's volume as 'the most outrageous example of this kind of thinking' (Kapferer 2005: 12).

Before tracing the ways in which this assumption intersects with the study of organisations, I will first explain what I mean by incommensurability and its opposite, with particular reference to Elizabeth Povinelli's seminal essay on the subject (2001). The concept originates in the philosophy of language, to refer to a situation in which an undistorted translation between two texts is decidedly impossible. Povinelli defines it thus, 'incommensurability refers to a state in which two phenomena (or worlds) cannot be compared by a third without producing serious distortion' (ibid: 320). The first example she gives to illustrate her point is a citation from philosopher W. V. Quine who is reflecting on a translation between English and Arunta.

> 'Assuming that English sentences have their meaning only together as a body, then we can justify their translation into Arunta only together as a body. There will be no justification for pairing off the component English sentences with the component Arunta sentences, except as these correlations of the theory as a whole come out right' (ibid: 321).

In fact this extract has a significant implication that Povinelli does not make fully explicit: the idea that meaning can only be truly conveyed 'as a body'.[25] Povinelli is telling us through Quine, that the very possibility of deeming someone or something 'incommensurable', requires accepting the precondition of some form of holism.[26] The part of one whole (an English sentence in an English text) cannot be equated with the part of another whole (an Arunta sentence in an Arunta text) without symbolically distorting one or both parts.[27]

The practice of commensuration, by contrast, is precisely this process, of equating part for part, and to repeat myself with reference to the commodity, 'both parts forgetting the wholes out of which they were formed'. Thus through the

25 Quine's philosophy of language is in fact defined by his holistic perspective (1961).

26 I will pick up this idea of holism again in the next section.

27 Incidentally it is in fact the recognition of social holism and its effects that defines Povinelli's most recent intervention examining the unpleasant side-effects of American liberalism (2011).

assumption of human commensurability, we again return to the universalization of exchange-value, one which obliterates those alternative holistic value concepts that threaten its production. As Espeland and Stevens incisively remark, 'Commensuration changes the terms of what can be talked about, how we value, and how we treat what we value. It is symbolic, inherently interpretive, deeply political, and too important to be left implicit' (1998: 315).

Heeding these final words of caution I now turn to the literature. In assuming commensurability, certain texts leave important questions of value unanswered. Gideon Kunda expounds very eloquently on the myriad of ways in which the culture of a Tech company is 'engineered', but fails to reflect on *why* one kind of culture is engineered rather than another, or indeed why American corporations have such need for manufactured 'strong cultures' (also cf. Garsten 1994).[28] In the anthropology of science meanwhile, why are John Law's British technicians assumed to occupy the 'low-status end' (1994: 122), and why do Latour's participants at the Salk Institute in San Diego indulge such a frequent use of economic metaphor (1979)?

There is a glaring statement which must be made now about this abstract individual, one which even Kapferer and his co-authors do not spell out completely. The most abstract, the most universal, the most commensurable of all subjects, is naturally, the Anglo-Saxon one. As a consequence it tends most frequently to be British and American organisational theorists who pursue this line of thinking. Annelise Riles studies the ways in which the concept of a 'network' acts as an anchor for local mobilization among her Fijian participants, recognizing that different parties use the network differently. Yet this is not what interests her. For Riles 'finding and describing difference is no longer enough' (2000: 18). Instead she seeks to study 'the points not of difference but of commonality, of universality even' (ibid). This is an unusual and provocative direction for an anthropologist to go in. However in doing so she fails to acknowledge the political asymmetry which always inheres in commonality. Riles traces the roots of the network concept from American information science in the

28 There is an interesting suggestion by one of his participants that 'Puritan values' might be at work which passes by unremarked (1992: 179).

1940s, but nowhere suggests the fundamental cultural imbalance that accrues from this American vision of relatedness being deployed by Fijian employees. There is what James Leach would call a 'conceptual colonialism' at work here (2007: 113), one which operates tacitly whenever universality rears its ugly head.

Likewise an increasing number of scholars have come to recognize the Anglo-Saxon ethnocentrism which inheres in debates about 'agency' (cf. Peacock 2013). The latter is particularly vivid in the work of Anthony Giddens. For Giddens, an agent is someone who 'could, at any phase in a given sequence of conduct, have acted differently' (1984: 9), and so for him is defined by choice, and by the visible manifestation of such choice. This ethnocentrism has recently been deconstructed from several quarters (Ahearn 2001; Frank 2006; Loyal and Barnes 2001), the most elegant treatment of the subject coming from Saba Mahmood in her study of the neo-conservative Egyptian 'mosque movement' (2005). Witnessing the emphasis her participants place on internal as opposed to external transformation (what we would commonly think of as agency), Mahmood persuasively makes the case for defining agency only with reference to its differential ethnographic manifestations.[29] Failure to do so is to enact the symbolic violence of commensuration. It compels the research participant to, in the words of Povinelli, 'make yourself doable for us' (2001: 329), without making plain the coercion involved.

One might feel now that we have strayed too far from the opening argument, so to conclude this subsection I will reiterate how the logic of produced worlds and commensurable subjects proceeds from hierarchy's negation. To do this I must return to the Dumontian maxim with which I began, that to adopt a value is to introduce hierarchy. For Dumont hierarchy is intimately bound up with *a priori* assumptions about value, the idea that when we arrive in an ethnographic setting, the landscape is not 'flat' as Latour would have it, but already in magnificent relief. This landscape has ideas about what is important, which make some ways of being and modes of exchange more possible or more likely than others. To ignore these mountains and valleys and cliffs is to ignore the hierarchy

29 Interestingly, this notion of agency as internal transformation is also present in the German concept of *Bildung*, a philosophy we will meet in the next section.

of value and its asymmetry of potentiality. With this is mind we will now take a closer look at the subtle alterity that Germany offers us: one which explodes the dogma that all organisations are made through individual action, that every one of its members is qualitatively the same.

iv) German holism

Holism – the notion, broadly speaking, that wholes are ontologically prior to the parts which compose them – has a long and largely venerable pedigree in the history of German thought. In the natural and social sciences you might think of nineteenth-century organic vitalism or twentieth-century 'Gestalt' psychology (Harrington 1996). Meanwhile in society-at-large, a good example of holistic thinking is manifested in Germany's so-called 'associations' or *Vereine.* A registered association (*eingetragener Verein,* of which the MPG is one) is a group of at least seven members with a non-commercial objective – such as a sports club – who are endowed with specific rights and obligations. This is not simply a collection of individuals but a new legal entity distinct from its parts: indeed a 'legal *personality*' as some have put it (Anheier and Seibel 2001: 13). There is of course a very dark side to the history of German holism, which appears to have, in the annals of cultural memory, nigh eclipsed all else. This is of course the Nazis' apparently holistic concept of the *Volk,* drawn from Herder and the Romantics and reconstituted in racist terms. I say apparently, because some have argued that by means of their biologization of individual difference and mechanistic social vision, the Nazis did not in fact offer authentic holism – *a priori* cultural unity – but totalitarian individualism cloaked as such (Dumont 1986: 173-8, Harrington 1996: 211).

I shall submit at this point that this holistic tradition has its philosophical origins in the writings of the German Idealists, and is moreover their defining metaphysic. This is visible at first glance simply from the language they use – I am thinking here of Hegel, Fichte and Humboldt – which consistently seeks to

express a form of unity.[30] Words like 'whole', 'complete', 'totality' pepper the texts, and the favoured metaphor is the 'circle': a line which reaches outwards only to meet itself, thereby encompassing a perfectly-rounded and distinct internality.[31] It is visible at second glance from the philosophies they advance. Fichte's whole is the totalizing whole of the *'Ich'* (variously translated as 'I', 'self', or 'ego'), whose absolute existence forms his first principle. This self is pictured as a circle, and 'completion is its distinguishing characteristic' (1970: 36). This self is not, however, cut off from the outside world. Rather it already contains this world within its own borders, in the form of the 'not-self', which becomes sensible to the self through 'feelings'. This totalizing self is thus simultaneously self and world together, an important move which I will return to below. Holism also manifests itself in the form of Hegel's 'Idea' (1977). The existence of the Idea ontologically precedes both subject and object, nature and mind, thereby dissolving these distinctions which become secondary to it. It is, for Hegel, an irreducible substance-universal which is 'discerned' or recognized (*erkennt*), by the mind, but significantly not constituted by it (Stern 1990: 117).[32]

The holism which comes to dominate German thought in the eighteenth-century and after is not some philosophical accident. Rather, as many scholars have suggested (cf. Dumont 1986, Sahlins 2010) it is a classic case of 'complementary schismogenesis' in Bateson's terms (Sahlins 2010: 118), where one cultural group seeks to distinguish itself from another precisely because of their very proximity.[33] This other was those European countries west of the Rhine whose thought was defined by the great philosophers of the European enlightenment: particularly John Locke, David Hume, Bishop Berkeley and René Descartes. The ontological cuts performed by these thinkers – between mind and body, humans and nature, knower and known, reason and the senses, to name but

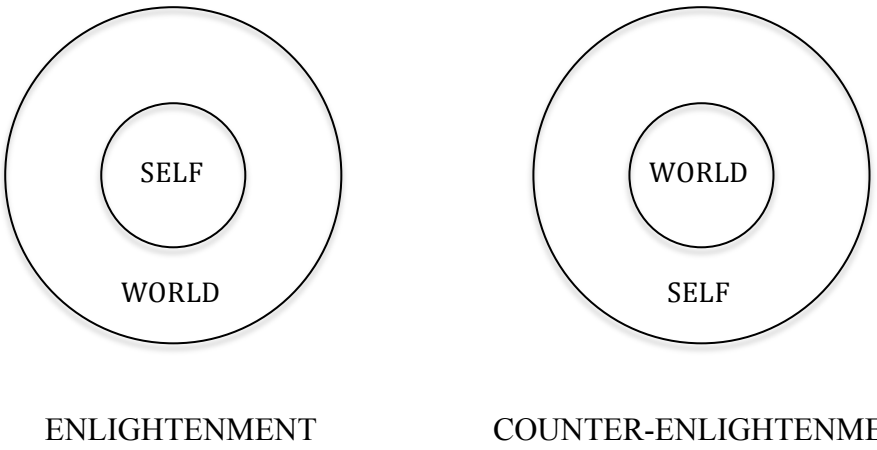
30 See Dahlstrom (2000) for a discussion of the aesthetic holism of Hamann, Herder and Schiller.

31 The circle appears in Fichte's *Science of Knowledge* on sixteen separate occasions, while in Hegel's *Science of Logic*, nineteen. Meanwhile 'whole' and its cognates appear innumerable times throughout the corpus of both these authors.

32 It is for this reason that Hegel's dialectic is so often misunderstood. Mind (*Geist*) does not synthesise subject and object into unity; this is precisely the transcendental idealism of Kant that Hegel was arguing against. Their unity is *a priori* , it is simply *recognized* by the mind. See Stern (1990) for a clear and incisive explanation of Hegel's holism.

33 Freud perceives something very similar in his analysis of the 'narcissism of minor differences' (1962: 68-9).

a few – were precisely what the Idealists sought to heal through their enthusiasm for the whole. For this reason, as a collective they are also sometimes considered spokespeople for the 'German counter-Enlightenment'. Indeed their schismogenetic response to western European thought in the late eighteenth-century, in many ways prefigures the contemporary critiques of the Enlightenment which have become so ubiquitous. It is now a cultural sport to decry Descartes' mind-body dualism, yet Hamann in 1785, had already warned, 'Do not forget for the sake of the *cogito*, the noble *sum*' (Dahlstrom 2000: 79).



ENLIGHTENMENT COUNTER-ENLIGHTENMENT

However there was also another powerful force closer to home which the Idealists were in dialogue with: the looming figure of Immanuel Kant. Kant's *Aufklärung* differed from the British and French Enlightenment through exactly his insistence on this 'noble *sum*': the ability of the subject to transcend the gulf between subject and object through synthesis. This doctrine created the space for the Idealism which his British and French counterparts denied, leading to the description of his philosophy as a 'transcendental' or 'subjective idealism'. Yet despite offering the first major interventions in Idealist philosophy, Kant was not a holist. The union of self and world was not ontologically prior as it would be for Fichte, Hegel and their contemporaries, rather he retained an insistence on Enlightenment dualisms, particularly between intuition and concept, which formed the foundation for the rest (Guyer 2000). German Idealism proper thus formally begins *after* Kant. His successors developed his idealism but abandoned his 'pluralism' (Stern 1990), forming a community of 'absolute' rather than

'subjective' Idealists defined by their commitment to the whole. It is possible that it is the historical stimulus of the French Revolution that incited the dramatic break with Kant. Certainly for Dumont, German thought is 'goaded on' by it (1986: 115), into becoming something quite different from its neighbours.

In any event it is true that seven years after the Revolution an anonymously authored document appeared, calling itself 'The Oldest Systematic Programme of German Idealism': a manifesto for the new philosophy which marked this break.[34] A short extract gives some idea of their emphasis, and of the 'two kinds of holism' I shall go on to outline.

> 'The first Idea is the notion *of my self* as an absolutely free being. Along with the free, self-conscious being an entire *world* emerges simultaneously - out of nothingness. The only true and conceivable *creation out of nothingness'* (1987: 161).

The first kind of holism I am identifying is manifested in the appearance of the self as a totality – 'the notion of myself as an *absolutely free* being', such as Fichte's *Ich*. The second kind of holism is the world as totality – an '*entire* world' – appearing alongside the self. However as is clear from this extract, this is a classic case of what Dumont would call hierarchical dualism: two entities exist in reciprocal relation, yet one is encompassed by, and thus subordinate to, the other. In this instance, the world is encompassed by the self (as per my diagram above). This means that the totality of the self concentrates the whole world within it, and the totality of the world finds its expression in the form of an individual– being the lesser partner in the dualism. One might recall the *Vereine* at this point, who despite being a group of at least seven members, become in their unity a new 'legal personality', i.e. a collective individual.

The notion of the individual as a holistic entity is theorized in the form of '*Bildung'* – translated by Bruford as 'personal culture' (1975: ix). The idea of

34 The authorship is still unknown but is generally attributed to Hegel or Schelling.

Bildung appears in the writings of several Idealists,[35] yet it is Humboldt who is perhaps most famously associated with the term, so I will treat his writings as representative of its popular meaning (cf. Humboldt 1969, 2000).[36] *Bildung* is fundamentally about a union of self and world. More specifically, it is about the self incorporating the world into their humanity. It is a morally righteous process, as it is a route to becoming more complete, more human; those who manage it 'have achieved what is called living in the highest sense of the word' (Humboldt cited in Dumont 1994: 94). The method through which *Bildung* is 'achieved' is through praxis: the self interacting with, and reflecting upon its environment. It is critically not through thought alone but through practices, through *Erfahrung* (experience) that this union is created. It is very important for Humboldt that this is willingly enacted rather than ends-driven; any activity which does not totally align with the genuine will of the self cannot bring about true *Bildung*.[37] Despite thereby interpenetrating through such activity, this dualism remains hierarchical. Outer is perennially subordinated to inner, 'because sheer power needs an object on which it may be exercised…so too does a man need a world outside himself' (2000: 58).[38] The end result is the creation of members of a shared world. Culture is thus produced from the inside out, an idea captured in Bruford's translation of the term.

The second kind of holism I diagnose – the whole as a totality taking the form of a collective individual – is variously expressed through concepts of '*Kultur'*, *'Volk'* and *'Nation'* (culture, folk and nation). It would be prolix to articulate in depth the subtle differences between the three (quite apart from their own mutations) and a few cursory points here will have to suffice. The principal thing to note is that all refer to a greater or lesser extent to a cultural group: not a community of individuals, but an individual community. The semantic shift between the universal and processual eighteenth-century vision of *Kultur*

35 Particularly Herder and Hegel.

36 Another reason to go straight to Humboldt is his relation of special influence on German scholarly institutions, having been invited to found the University of Berlin (now Humboldt University) in 1809. He is also, it should be noted, a key influence on Adolf von Harnack, who cited him repeatedly in his speeches and writings.

37 This forms one of the struts for his strong argument against state intervention (1969). The state is seen as an alien entity imposed from above, rather than a cultural entity its citizens freely associate themselves with.

38 Here we hear the rumblings of what Nietzsche would later call 'the will to power' (2003).

promoted by thinkers such as Schiller, and the more static and particular visions of *Volk* and *Nation* promoted by later thinkers such as Herder and Fichte, is well-documented (Elias 1996: 123-136).[39] What is not however, is their continuity in the sense of being holist counter-Enlightenment alternatives to Anglo-French Enlightenment thought. Even Schiller's *Kultur* which is claimed as the most universal of the three, rejected the Enlightenment abstraction of 'elementary man', arguing that humanity cannot come to be beyond its particular spatial-historical locatedness. The major difference is an ambition in scope. There is a transition from the early version of *Kultur* potentially encompassing the entirety of humankind, to later versions of *Kultur*, *Volk* and *Nation* in which this group is effectively scaled down to the size of nations.

By the late eighteenth-century the social whole represented by *Volk* and *Nation* (now the linguistic and cultural community of the Holy Roman Empire), comes more intensively to take the form of a collective individual, with its own unique personality (Dumont 1986: 115-131).[40] For Dumont, this is a case of acculturation to the French Revolution by importing its rhetoric of individualism onto the collective plane. However, I would assert that this notion of the whole as an individual entity emerges too from their cosmological monism (generated by Lutheran Protestantism). The individual is one and the collective is one because God made them thus. Oneness has an ontological primacy that the multitude does not. This is particularly clear in Herder's writings. As he says, 'It is only the Creator who thinks of the whole unity of one, of all, nations in their manifoldness without having the unity thereby fade for him' (2002: 293).[41] To be one social entity is to exist in the eyes of God.

It should be said at this point that the incarnation of this 'whole unity of one' in the form of a single person, a product of the hierarchical dualism outlined

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39 Universal in this sense means global rather than homogenous: such as Schiller's case for a 'universal history', i.e. a global comparative history (1882).

40 This is particularly true for Herder, who is constantly making swift conceptual leaps from individuals to collectives and back again (2002: 160, 277).

41 Other Idealists (such as Fichte) are not explicit about the presence of religion in their philosophy. However, as we learn from Carl Schmitt, the notion of the personal sovereignty of one individual is a straightforward channeling of the Christian belief that 'a sole God governs the world' and is its 'sole architect' (1985: 47).

above, creates the space for the legitimation of absolutist leadership the Idealists are well known for. Because this person already contains society within themselves they are seen as a straightforward aggregate of that society, embodying the collective will in theirs.

Those familiar with Dumont's opposition between 'individualistic' and 'holistic' societies might be a little confused at this point (1980), and would be quite right to be. Germany as a European nation would fall firmly under the 'individualistic' side of his dichotomy; yet here I am suggesting its dominant ideology is characterised by not one but two kinds of holism. Having offered a thoroughly 'Dumontian' interpretation thus far, it is at this point that I part company with Dumont, because despite clearly recognizing 'the idiosyncratic formula of German ideology' namely, 'community holism and self-cultivating individualism' (1994: 20), he never attempted to resolve the contradiction this brought to his earlier work on Hindu caste (1980). The fact is that Germany possesses both individualism *and* holism as dominant values, except that the latter is encompassed by the former – as he in fact elsewhere implicitly acknowledged.[42] The individual is a holistic entity and the whole is an individual entity. Both values exist in *a priori* relation.

In demonstrating the holistic German philosophical tradition from which the Max Planck Society has sprung, it enables me not only to reposition the locus of value (from individualism to holism), but also to problematize some of the anthropological speculations which get applied to the West. In employing homogenising terms like 'Euro-American', they presume that the whole of Europe and America is governed by a unitary ideological system.[43] By contrast, the Max Planck Society and the cultural history that wrought it, are iterations of what Dumont calls the 'German sub-culture' within modern European ideology (1986: 113). I am in no sense attempting to reinvigorate tired and dangerous tropes of

42 Incongruously, Dumont does actually state that within German ideology 'holism (is) encompassed within individualism' (1986: 119). Despite his brilliance, this exemplifies something of Dumont's inconsistency across his oeuvre. Another well-documented example is the slippage between 'the individual' and 'equality' as the dominant value of the West (Robbins 1994).

43 Statements such as Robbins' 'an indigenous conception of the whole is absent in modern Western culture' fail to reflect the nuances I am arguing for here (1994: 31).

German 'uniqueness', but simply highlighting the subtle ontological differences between the Western Enlightenment and the German Counter-Enlightenment, which have enduring contemporary effects. It is these two kinds of holism which configure the relations between individuals and groups inside the organisation.

v) Hierarchy inside the Max Planck Society

It falls to anthropology and its methods of intimacy over distance, to reveal the inevitable distinction between a society's official representative discourses, and the personal experiences of one's participants. This is an important one to make in the Max Planck Society, because despite the cursory notes with which we began about respecting 'levels' before interaction, these levels as such do not make it into the representative Societal discourse of hierarchy.[44] The only hierarchical principle which manages to sneak in the front door, clinging surreptitiously to the shirt tails of a venerated individualism, is the binary hierarchy of leader and led. In the Society, this notion of leadership is known as the 'Harnack principle': described as the 'structural principle' of its social organisation, and never far from the lips of presidents (Gruss 2011), directors, and Max Planck scholars and commentators (Laitko and Vom Brocke 1996, Renn and Kant 2007).[45][46] It receives an enormous volume of air-time, and furnishes us with the raw material of what Dumont would call the 'value-idea' of the Max Planck Society, which I identify as one of the 'charismatic individual'.

However, one of this thesis' major claims, is that the Max Planck Society operates through three recognizable principles, rather than only one. These are:

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44 In reflecting on why this might be I am inclined again to return to that turn of the nineteenth-century moment. For Dumont the German Idealists 'worked under the spell of the French Revolution' (1986: 129) in substituting hierarchical modes of thought for individualist alternatives. I would add however that they were also working under the spell of the equalitarian and individualist cosmology of Luther. In any event, as he says, this body of literature is 'without any mention of hierarchy proper' (ibid). Multivalent hierarchy in Germany thus goes underground in the early nineteenth-century. It is not negated as it is further west, but it is philosophically suppressed.

45 Cf. Chapter 3.i.

46 http://www.mpg.de/183251/portrait

the hero principle (giving rise to a form of leadership I call heroic headship), the longevity principle, and the precarity principle. Before fleshing out the value-idea of the Society and its principles, I will first very briefly define the Harnack principle and the particular genre of leadership it legitimates.

The Harnack principle

The formal hierarchical structure of the Max Planck Society is encapsulated in the Harnack principle (*Harnackprinzip*), taking its name from the founder of the Kaiser Wilhelm Society, Adolf von Harnack. The only textual explanation of its logic can be found on the Society's website:

> 'It represents a traditional policy of appointing the brightest minds as Scientific Members of the Max Planck Society and building whole departments around these exceptional individuals when they become departmental directors... Once appointed, the heads of department or Max Planck Research Groups do not follow a curriculum or research programme determined by the organisation or by market requirements. Instead they rely on their own intuition, which allows them as researchers to transform and advance the cause of science'.[47]

Despite it being a purportedly 'completely official strategy', the Harnack principle is not written into the statutes and so constitutes no legal basis for the Society's internal governance. Instead it must be understood as an ideological discourse, which provides the MPG with a unifying structural premise, but also maintains those with the most authority in the organisation in a position of hegemony.[48] In this respect it is no different from other cultural discourses of leadership such as kingship, chieftainship or bigmanship: which both conjure and legitimise various

47 http://www.mpg.de/39586/MPG_Introduction?clientIP=134.76.24.9&page=2

48 Cf. Chapter 3: introduction – section i.

forms of personhood, with their own blend of status and power. This principle constitutes one expression of scientific leadership I name 'heroic headship'.[49]

The brand of authority reified in the Harnack principle is most propinquitous in kind to that identified by Max Weber as 'charismatic' (1979). Indeed it can be no coincidence that Weber and Harnack were contemporaries and correspondents (Scaff 1991: 157), although that is another question for another scholar. This propinquity works on several levels. Firstly charismatic authority is clearly defined by the personality of its leader, who should possess 'supernatural, superhuman, or at least specifically exceptional powers or qualities' (ibid: 241) (echoing outright the website's description of 'exceptional individuals'). However, the claim to legitimacy of a charismatic leader comes not from the possession of such qualities, but from the capacity of community to 'recognise its genuineness and to act accordingly' (ibid) (the Harnack principle). Another striking correspondence comes in the form of what Weber calls 'economic considerations' which are particularly 'foreign' to this sphere, even 'despised' (ibid: 244) ('do not follow a curriculum or research programme determined by… market requirements'). Charismatic authority for Weber was also diametrically opposed to bureaucratic in its attitude towards rule-following. The language of 'intuition' signposts this here, but in any event the Society is frequently described explicitly by its employees as 'non-bureaucratic'. Bureaucracy is the one of the organisational others against which they characterise themselves. Another close tie is the repudiation of history, and the necessity for the charismatic leader to prove themselves on their own terms. Charismatic authority is pure immanence .

Most of the differences between heroic headship and charismatic authority revolve around Weber's discussion of the latter's 'routinisation' (ibid: 246). Although there *is* a 'problem of succession' of a sort ('this is where the system has its biggest problems' they say), because the scientific community dissolves when the director retires or dies; there is no real succession in the way Weber implies it, only the founding of a new community through a new director. Similarly the authority of the heroic head is not inherently unstable and contingent

49 Cf. Chapter 4.

upon success like his Weberian counterpart (an instability and contingency the community seeks to minimise through routinisation); once appointed the director has his post and resource-stream for life. The reason why heroic headship does not progress developmentally from charisma to routine, is because it has *already been routinised a priori*. Directors claim to be 'non-bureaucratic', yet every Institute does have its own administration (not to mention the central administration in Munich). The Harnack principle eulogises 'intuition', yet there is a protocol to the director's appointment, allocation of property and resources, and subsequent ritual functions. In Weber's terms, heroic headship must therefore be understood as a form of bureaucratised charisma.[50]

The Value-Idea

Although it is implicitly present throughout his corpus, it is seemingly only in his *Essays on Individualism* that Dumont spells out the concept of the value-idea.

> 'If for each culture one agrees to seek out the pre-eminent value-idea by which it is animated, all, as Marx said, the ether which lends colour to all things, one will perceive at one stroke – at any rate, from a comparative viewpoint – the main lines of organisation of the ideological whole, the necessarily hierarchical configuration of levels (1986: 231).'

The fusion of values and ideas – realised in the act of hyphenating – is his effort at effacing the '*is/ought* separation' (ibid: 246) he holds to be central to modern European ideology. In recombining the ontological with the moral, the value-idea is a thoroughly 'non-modern' (ibid: 234) proposition. Joel Robbins explains what he understands by it with a rather nice analogy. It is, for him, like 'a rather busy mobile with many separate and balanced arms that are all, in the last analysis,

50 There is a great deal more to be said about the character of heroic headship, but this will be integrated into the ethnographic detail in Chapter 4.

dependent upon and coordinated in their movement by a central string. A pre-eminent value would be like such a string' (1994: 28). In Dumont's famous study of Indian caste, this central string is the notion of 'purity'. It is this which in his analysis, configures the Hindu 'whole': according its 'purest' priestly class, the Brahmans (or Brahmins) the highest status.

As I have already suggested, the value-idea I propose for the Society contradicts Dumont's own dichotomy. In his schema the 'ether which lends colour to all things' was derived either from holism or individualism. He clearly states, 'either value attaches to the whole in relation to its parts, and value is embedded, prescribed, as it were, by the very systems of representation, or value attaches to the individual' (1986: 261). I argue, conversely, that it is the value-idea of the 'charismatic individual' – an individual which is also at the same time a whole – which configures the Max Planck Society, an argument which undercuts the either/or distinction he is drawing here. The very scope of Dumont's comparative ambition thus becomes his undoing. As Alan Macfarlane comments, in a perspicacious reading of his work, Dumont 'completely overlooks' the large part of continental Europe (i.e. excluding England, Holland, and parts of Scandinavia) which remains '*Ancien*' – in other words, holist and hierarchical – until the late eighteenth-century (1993: 15). The Max Planck Society, through the mediation of the German Idealists and their impact on scholarly institutions, is a historical product of precisely this, what Hacking elsewhere calls 'eastern...holism' (1990: 190). As stated it is a holism which in Germany acculturates to Western Europe by articulating itself in individual form.

Having imported the value-idea into my analysis – contingent upon a broadening of its analytical potential – it remains for me to explain what I mean by the charismatic individual as a value, and furthermore what work it does for us with respect to the Society. The usage of charisma as an analytic rather than simply a personality-based trait I clearly borrow from Weber, who was the first to do so (1978: 241–254, cf. Runciman 1993: 226–250 for an alternative version). Weber's ambition, however, was to explore it as a technology of 'legitimate domination' rather than a value in itself, so although his definition overlaps with mine, there are further characteristics I would add, and others I would spell out

where he leaves them implicit (five in total). Firstly I shall submit that the political precondition for charisma is autonomy. Weber identifies this in the charismatic communities' ideological distanciation from bureaucratic and economic forces, but does not cite autonomy per se as a key foundation. In this landscape of autonomy the charismatic individual is then able both to self-generate (with an attendant confidence on an ability to keep generating far into the future) and also to self-limit (thus curtailing its own scope for action). 'Charisma knows only inner determination and inner restraint' he says (Weber 1948: 246). Fourthly, charisma is a spiritual – rather than a political or economic – potency: (this forms the nub of Weber's definition). Charisma is thus invested in immaterial qualities like creativity and synergy rather than material accumulation. Finally, charisma is unique, *sui generis*, of its own kind. Dumont seems to be getting at the same thing when he states that 'individual singularity, imposes itself as a value' in German thought from Goethe onwards (1994: 191). In my understanding, singularity is just one strut in a larger architecture of the value of charisma which becomes concentrated in the individual.

So as with Dumont's study of Hindu caste, where the notion of purity runs like a red thread through the whole system, this value-idea has broad-reaching effects within the Society. The most obvious and graspable of these is that it is through embodying this value-idea most closely, that directors draw their pre-eminent status. It also goes some way to explaining the curious position of the technicians – relative to other Western organisations – who also embody some of these characteristics (to a lesser degree). In terms of organisational practices, it also helps us to understand – in no particular order – the peculiar technology of audit, forms of iconography, motivational discourses, the distribution of resources, and pedagogical techniques. It might seem to the reader that it would be easier to identify '*Bildung*' as the value-idea, rather than imposing this etic definition. *Bildung* after all, contains the notion of a 'unique' and spirited individual within it (Ringer 1969: 87). Yet *Bildung* is a philosophy of the self rather than of hierarchy, and thus neglects the aspect of social generativity, which is a key part of what the Society mean when they talk about the Harnack principle. The charisma of the directors is the spiritual resource out of which the whole

social-scientific order emerges. As one of them says, 'The chemistry between these people determines the success of the Institute'.

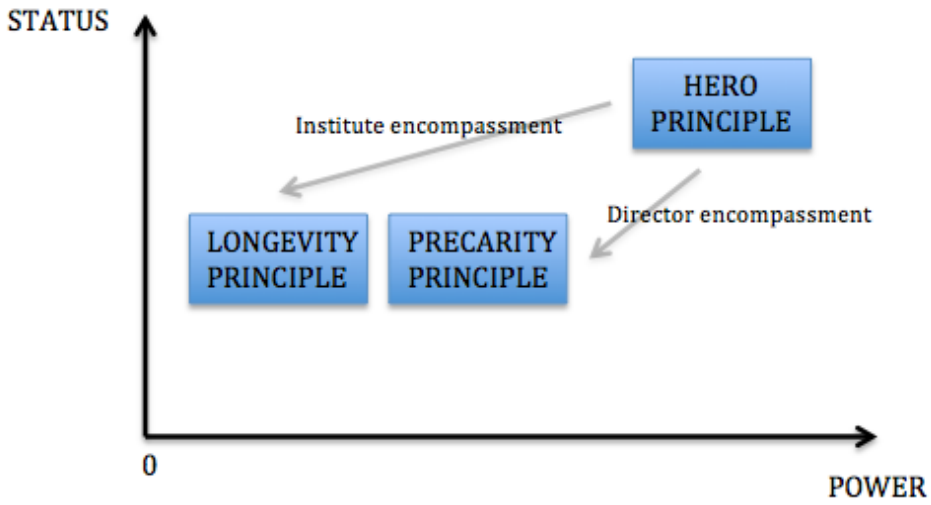
The three principles

At the beginning of this section, I asserted that a major claim of the thesis is the social significance of three distinct principles. It is now the moment to elaborate on this. In the MPG's understanding of itself, there is only one structural principle through which it is organised – that of leadership. However, there is an implicit contradiction here, because new recruits are also told 'not to by-pass the individual levels in working relationships': implying a multiple. In an effort to distil these 'individual levels', I split this one principle into three, of which the principle of leadership (the hero principle) is but one constituent.[51] The difference between the other two principles (precarity and longevity, which relate to the scientific and technical strata respectively) is dominated by the prism of temporality – although includes other secondary dimensions. These dimensions will become clearer in the chapter summary below.

Analytically however, the relationship between the precarity and longevity principles can be understood, in Dumontian terms, as one of 'complementarity' (1980: 53-5). In Dumont's analysis of Hindu caste, the ascription of one social group as 'pure' (the Brahmans) necessitates the existence of another as 'impure' (the Untouchables). These two poles are 'conceptually inseparable' (ibid: 54) in the functioning of a totality devoted to maintaining religious purity. Further, in contrast to his notion of 'hierarchical opposition' (Parkin 2003), neither pole encompasses the other, although they are unequal. An analogous relation is exhibited by these two principles. Both are equally necessary in serving the Max Planck hierarchy's overarching function, which is to produce scientific research. It

51 Although such a move would no doubt have been violently opposed by the man himself, I cannot help but see this suppressed three-fold hierarchy as expressive of what Dumézil's calls 'tripartite ideology' (1958). His broad argument is that Indo-European cultures in general possess a tendency towards tripartite social function. Indeed, it can be no happenstance that the first definition of hierarchy – coming from theologian Pseudo-Dionysus in the 5th century – is 'three divisions of angels' (OED 2013).

is these two rhythms, fast and slow, short and long, that together bring the MPG into a productive equilibrium: the ephemeral presence of the scientists only being rendered effective through the lasting presence of the technicians. Similarly, neither principle encompasses the other, although both are encompassed by the hero principle in their different ways (the scientists by a director, the technicians by the Institutes). They are also politically unequal: technicians responding to scientific needs rather than vice versa. If one wished to picture this hierarchy diagrammatically, it would look something like this.



vi) Chapter summary [52]

Chapter 2 opens with the founding ceremony of the Max Planck Society's predecessor, the Kaiser Wilhelm Society, in 1911. A narrative of the organisation's one hundred plus years then unfolds as a sequence of historical moments. For an entity which, since its inception, has always been so intimately bound to German national consciousness, it should not be surprising that this

52 In this summary I deliberately avoid explanations of how each chapter is embedded in its own set of scholarly discussions (as these frame the chapters themselves in any case), instead offering a prosaic overview of their substantive content.

chronology reads like a summary of Germany's dramatic twentieth-century. From the diplomatic isolation of the First World War, to the horrors of the Third Reich, to a militant '68 critique, the reunification of Germany in 1990, and the globalisation of the late twentieth-century and after, the MPG/KWG has always had the hand of history on its shoulder, pushing it this way and that. I then offer a quantitative overview of the organisation, to provide the vital broader context of its financing and personnel before the ethnography gets going. This chapter also confronts the important question of methodology: the how and the where and the who of this study, ending with a series of reflections on how I understood and was understood inside the organisation.

In Chapter 3 I address that quintessential Dumontian priority: the question of value. If to adopt a value is to introduce hierarchy, then an analysis of the Max Planck's hierarchy must be preceded by some discussion of its value(s), or as Dumont frames it in his later work, value-idea(s). This is not necessarily a straightforward task. The Harnack principle on which the whole social order hangs has never been formally codified in writing, and unlike other hierarchies there is no explicit cosmological schema that one can turn to for exegesis.[53] Instead this task has to be performed through synthesis: bringing a variety of expressions of Max Planckness together (in the form of discourse and material culture), to forge what Holbraad would call an 'inventive definition' (2009: 87) of what these values might be. In doing this I lay the groundwork for the subsequent chapter, describing the directors, where the dominant value of charisma is most expansively realized.

With Chapter 4 the ethnography proper begins. I tell the story of the Max Planck Society's heroic stratum: the directors' rise to prominence, their technologies of governance, and experience of selfhood. What makes this story of leadership a charismatic one, is the isomorphism between the directorial self, and the social relationships and scientific work which characterise their community. The departments are visibly infused with the director's own ideas and personal

53 Of course, implicitly, my argument is that much of this hierarchy rests on certain Lutheran precepts, but this is an etic assertion rather than one my interlocutors would themselves embrace – inhabiting as they do, a secular 'theology' (Schmitt 1985).

inclinations. Alongside this ethnographic narrative is an analytic paranarrative: the similar characteristics exhibited by leaders of other kinds which have appeared in anthropological accounts, from Melanesian big men to the kings of Africa and Hawaii. Such comparisons enable us to break with that Dumontian dichotomy, between modern and non-modern societies, which obstructs an awareness of clear continuities between forms of leadership in different regions. I then dig deeper into their cultural specificities. Being a collective individual in an individual collective, there is a particular German quality to this form of charismatic authority that the MPG has institutionalised. They experience their positions with both agency and constraint in the manner of a Fichtean self.

In Chapters 5 and 6 I tread into areas of the Max Planck hierarchy that its representative discourses tend to neglect, beginning with the most invisible group, the technical staff. These are the people employed (almost always) permanently inside the Institutes to manufacture samples and devices, to outfit and maintain the laboratories, and to instruct inexperienced scientists in the daily work of experimentation. My encounter with this group is saturated with their cultural unfamiliarity, one which the ethnographic content of the chapter inscribes piece by piece. Not only do the technicians have a profoundly different temporal relationship to the organisation to that of the scientists, but their experience of the organisation also diverges in other ways. Meanwhile the technicians differ significantly from their counterparts in other organisations – scientific and otherwise – in their comparatively elevated hierarchical status (in accepting Dumont's distinction between status and power). To explain this I look to some of the major tenets of Luther's *Beruf* concept, elements of Idealist *Bildung*, as well as the historical roots of the German vocational education system which they have all, without exception, passed through.

Finally in Chapter 6 the last part of this hierarchical whole is slotted into place, with an ever-changing constellation of transient scientists. For many of these employees – particularly at the junior level – their experience within the organisation is simply the unfolding of a great adventure. They get the chance to use cutting-edge instrumentation, to go on yearly scientific 'retreats' financed by the Society, to meet other enthusiastic scientists from across the world, and to

bask in the reflected glory of the Max Planck brand. Others however, particularly at the senior level, may start to rub up against some of the Society's constraints: the lack of a permanent position for many, the incomplete social protection for non-Germans, and the ideological foreclosure of ascent into the heroic stratum. To explain all of this, I again look to German history for answers. International scientists can be situated within Germany's long-standing relationship to foreign labour, in its temporary nature and high emphasis on productivity. Meanwhile, the seismic social difference between senior scientists and directors has its precedents in the 'mandarins' of the German university system in the nineteenth-century (Ringer 1969), demonstrating the resilience of the hero principle from another angle.

2. Setting and methodology

As the title suggests, this chapter can be split into two main parts: setting and methodology. My description of the setting has several strands to it. As I made the bold claim in the introduction, that the hierarchy of the Max Planck Society is 'already there and has been for some while', it becomes incumbent upon me to include a historical perspective on the organisation – as a preface to its contemporary character. With respect to hierarchy, this history is largely oriented around the inception and development of the Harnack principle, i.e. the centrality of the directors and the ideas of autonomy which surround them; although the recent globalisation of the Society has also impacted upon the recruitment of scientists. I then essentially take a Durkheimian turn, exploring the organisation's 'social facts' (1982) through its statistics. In relation to the latest chapters, some of the most pertinent of these are: the very small number of directors relative to the whole population and the comparative ethnicities of scientists and technicians. By the third section, I reach the most prosaic meaning of a setting, offering physical descriptions of what I call the Primary and Secondary Institutes, where I spent the majority of the ethnographic process.

Methodology is another multivalent term. I first present the method in a bare quantitative manner: with a record of activity and a footnoted timeline, as well as the precise numbers of participants. I then problematize the definition of 'participation' and follow this up with a description of how I obtained access to the Institutes. In the final two sections, the discussion of methodology becomes more particular to anthropology, as I acknowledge the reflexive turn from several vantage points. The first series of these address the peculiar nature of my position inside the organisation, which could change depending on whom I was interacting with, but which always deepened my understanding of the Society in some way. Finally, I inscribe the elements of my own subjectivity which recognisably influenced the way the thesis developed, from its research through to writing up.

i) The history of the Max Planck Society

At the centennial celebration of the University of Berlin on 11th October 1910, thousands of scholars, students and public figures gathered in its newly rebuilt assembly hall to listen to Kaiser Wilhelm II. 'First with visible excitement, and then with deep emotion and solemn seriousness', the monarch expressed his wish before the crowd, that 'under my name and protection a new society will be founded, charged with the task of building and preserving research facilities' to work 'alongside the Academy of Science and the Universities…as integral parts of the whole scientific organism' in Germany.[1] Through this, he claimed, the original vision of Wilhelm von Humboldt when founding the University of Berlin – of establishing a nation-wide scientific community – would finally be brought to fruition. The Kaiser saw this task as 'a sacred challenge that the present demands', its success the performance of his own 'patriotic duty'.[2] It would be called the *Kaiser-Wilhelm-Gesellschaft* (hereafter Kaiser Wilhelm Society or KWG).[3]

The speech was written by Adolf von Harnack, a Prussian Lutheran theologian at the university, and tutor to the monarch's children. While the Kaiser would be the eponymous protector of the KWG, Harnack was in every sense, its founder (and would become its first president), and these narratives and connections are his. He was clearly taking pains to assert a historical continuity with the University of Berlin (now Humboldt University), having chosen to announce the establishment of the KWG on its centenary and inside its own buildings. Much like the turbulence in Germany and Europe at the turn of the nineteenth century, created by the French Revolution and Napoleonic wars, the turn of the twentieth was again beset by mass social unrest and combusting

1 'Zuerst mit merkbarer Erregung, dann mit tiefer Ergriffenheit und heiligem Ernst…unter Meinem Protektorat und Namen eine Gesellschaft zu begründen, die sich die Errichtung und Erhaltung von Forschungsstätten zur Aufgabe stellt…neben der Akademie der Wissenschaften und der Universität…als intrgrierende Teile des wissenschaftlichen Gesamtorganismus', (speech and its description published in a newspaper at the time, 'Täglichen Rundschau', (The Daily Review), cited in Vom Brocke (1990: 27-30).

2 'Eine heilige Aufgabe der Gegenwart', 'landesväterliche Pflicht' (ibid: 30).

3 For early clarification, but as I will go on to show, it is this organisation which is later renamed as the 'Max-Planck Gesellschaft' in 1948.

diplomatic tensions. Indeed while this ceremony was taking place, bloody battles between striking workers and state police filled the roads not far away (Vom Brocke 1990: 31). The founding of the Kaiser Wilhelm Society – just like the founding of the University of Berlin – was presented as a soothing balm to heal the nation's ills, one pillar of Wilhelmine *Sammlungspolitik* (the politics of national cohesion) to bring Germany's warring factions together. At the opening of its first Institutes, children from the local *Gymnasia* were invited to occupy the vanguard of those who lined the streets: the embodiment of a healthy and prosperous posterity.[4] His invocation of Wilhelm von Humboldt is also significant. Humboldt was a figure whom Harnack quoted often, and clearly drew great strength from (Vierhaus 1996: 138). The link I posit between the major exponents of German Idealism, and the philosophy of the Max Planck Society today, was thus already historically causal to its very inception.

The new society would be research-oriented – taking Minerva the Roman Goddess of Wisdom as its heraldic symbol – liberated from the pedagogy and bureaucratic excesses of the universities, and oriented around a principle of self-governance. Its main fields of research would be natural scientific, although the humanities and social sciences were not necessarily excluded. It would start life in Berlin, but then expand across Germany. The first Institutes were thus grounded in the natural sciences: Institutes for Chemistry and Physical and Electrochemistry opened in Berlin-Dahlem in 1912, and Experimental Therapy nearby in 1913. However as early as 1914 the human sciences were also represented through the opening of the 'Bibliotheca Hertziana' – an art historical library based in Rome – and the announcement of an 'Institute for German History' to open on the site of the Royal Library of Berlin. Both got off to a fraught start however, as activity in the Bibliotheca was halted when the Italians entered the First World War in 1915, and the opening of the Institute for German History delayed as a consequence of the war until 1917.

4 Photographs published in Vom Brocke (1990: 60-61).

Despite taking the name of the imperial monarch, the KWG was in fact classified as a private company: a 'GmbH'.[5] This move distinguished it from the German universities still further. It would be financed through a mixture of a small amount of state support, and a large amount of private patronage from individual and corporate donors drawn from the ranks of Germany's industrial class. Harnack's expansive network of wealthy and powerful friends was critical in garnering the substantial financial outlay and maintenance costs the KWG required: the guest list of this opening ceremony reading like a 'who's who of German industry'.[6] Indeed several key industrialists and financiers were appointed as members of its newly formed 'Senate'.[7] Another effect of the KWG's private status meant that it was exempt from the laws governing civil servants. This in fact had many progressive consequences, as it meant the Society could legally employ women – Lise Meitner for example, the eminent experimental physicist, was given a permanent position in the Institute for Chemistry in 1913 – and was more open to the employment of non-Germans.

Such openness predictably came to a juddering halt with the 'Nazification' of the KWG from 1933 - 1945: what former president Hubert Markl once called the 'dark shadows' (*dunklen Schatten*) of the Society's history (1998: 9). Initially this took the form of purging Jewish and leftist scientists from the Institutes, and their replacement with others more amenable to the regime. It then became facilitation of the Nazis' 'Ayran Science Movement' and 'Aryan Technology Movement' which prioritized research and development into racial hygiene, autarky and rearmament (Heim et al. 2009: 2). In following their ideological agendas, KWG scientists became intimately involved in some of the Nazis' worst atrocities. The Institutes for Anthropology and Biochemistry were linked to some of the inhuman experiments carried out in concentration camps, while the Institute for Brain Research used the brains of victims of so-called 'euthanasia programmes' at Auschwitz, in their efforts to find a scientific basis

5 It stands for 'Gesellschaft (G) mit(m) beschränkter(b) Haftung(H)': in other words, a 'company with limited liability'. This particular legal status was established in Germany in 1892, and means that it is a private enterprise, but that the accountability for debts and bankruptcy falls to the state rather than the owners.

6 http://www.mpg.de/946619/event2

7 Among these were Henry Theodore von Böttinger, a key player in the chemical industry, Walther vom Rath, a scientist and co-founder of I.G. Farben, and Leopold Koppel, a very wealthy Jewish bank-owner.

for determining race (Schmuhl 2009). The Society even made use of around a thousand forced labourers to carry out its research, including scientists and technicians being made to work against their will. For many years afterwards, this bleak episode was effectively suppressed by the Society in what has been called its 'whitewash culture' (Sachse 2009). Key figures like president Adolf Butenandt, presented the Society as one of the many victims of Nazism.

This whitewash has now been stripped away, particularly through the use of documents which have only lately become available (Heim et. al. 2009).[8] Rather than being a victim, Heim maintains that 'up until the very last weeks of the war, the KWS was an effective and dependable partner of the National Socialist regime' (ibid: 8). One could even say that the KWG in some ways thrived under Nazism. The total budget trebled from 1933-1944, and rather than constraining research – much like the relaxation of legal protocols governing society (Agamben 2005) – the National Socialists expansively relaxed ethical protocols governing science, a fact which scientists could take unprecedented advantage of. KWG scientists entered into what Rüdiger Hachtmann has called a 'Faustian Pact' with the National Socialists (2009: 44): in which they both accommodated themselves to their demands, while simultaneously exploiting the new financial and ethical freedoms they were given, to pursue their own scientific questions.[9]

After the capitulation of Germany to the Allies in 1945, the whole future of its foremost research organisation was thrown into question. It should not be assumed that the transition of the Kaiser Wilhelm Society into the Max Planck Society was in any way straightforward, or a simple act of renaming. Rather, the survival of the Society in Germany only came about through very active decision-making on the part of the Allied powers – in talks with leading German scientists – particularly the British who offered 'exceptional' support to the

8 The Max Planck Archive has a 'sixty-year rule' to safeguard the autonomy of its directors. This means that documents must rest for sixty years before being made available to historians. As a consequence, its archives from the end of the war were opened as late as 2005.

9 In 2001, under the presidency of Hubert Markl, the Max Planck Society officially accepted responsibility for the crimes committed under Nazism (Heim et al. 2009: 7).

process (Oexle 1995: 7).[10] It also rested on long discussions among the international scientific community about how the MPG would differ from its predecessor. As a result when the Society was officially founded on 26th February 1948 in Göttingen as 'The Max Planck Society for the Advancement of Science, e.V', 'everyone breathed an enormous sigh of relief' that its future as a research organisation was finally secured (Heinemann 1990: 407).[11]

Not only would the new organisation naturally be demilitarized and 'denazified', it would change its legal status from a 'GmbH' to an 'e.V' (*einvertragener Verein)*: a private enterprise to a not-for-profit organisation. It would be financed therefore – according to the 'Königsteiner Agreement' – partly by the *Länder* which hosted the Institutes, and partly by the Federal Government (Ebersold 1998: 158). This financial structure was intended to provide the material basis for the freedom outlined in Article 1.2 of its founding statutes, which has been cited by directors ever since.[12] One major consequence of the KWG's nefarious activities during the Third Reich, has thus been an ideological entrenchment of the notion of directorial autonomy in its successor (Ebersold 1998).

Fast forward now to the 1960s, when this notion of freedom enshrined in the statutes – which was at least partly freedom for individual directors to govern the Institutes as they will – came under increasing attack.[13] In 1964 the directors attempted to mollify the charge of being omnipotent autocrats by diluting Harnack's original concept of a 'central figurehead', around whom the Institutes were organised. The number of directors per Institute was increased from one to at least three, transforming this formerly individual position into a 'collegial directorship', in which each would take turn to act as its managing director (Gerwin 1996: 211). Yet for many this did not go far enough. In the wake of the

10 Indeed, this historian argues that 'The unavoidable conclusion is that without this support from the British there would be no Max-Planck-Gesellschaft today' (ibid). The first title of the new organisation was in fact 'The Max Planck Society for the advancement of science in the British zone' (ibid, 5).

11 'gab es ein grosses Aufatmen'.

12 Cf. Chapter 3.i.

13 The statutory changes outlined in this paragraph however, bear little relation to the *ideological* entrenchment of the director's position.

1968 revolt, the directors felt the force of its anti-hierarchical critique very directly when they were pelted with eggs by students on entering their General Meeting (*Hauptversammlung*) in June 1969 (Gerwin 1996). Three years later and armed with the knowledge that they had to change to survive, the members of the General Meeting in 1972 finally voted to introduce an 'external advisory board' (*Fachbeirat*), to which the directors would be rendered accountable, and a 'union' (*Betriebsrat*) which all employees bar the directors were permitted to join (Henning et al. 1998: 219). Both of these institutions remain today as key structures in its internal governance, although the *Betriebsrat* tends to be dominated by the technical staff.

The next turning point came in 1989 with the collapse of the Soviet Union and its German Democratic Republic (*Deutsche Demokratische Republic*). Consistent with Humboldt and Harnack's belief that a community of scientific scholarship could facilitate national unity, there was an energetic move to expand the Max Planck Society into the states of the former East Germany as part of the process of reunification. The directors adhered to the idea that 'The Max Planck Society should taken on the same role in the new states as it has in the old ones' (Henning et. al. 1998: 399).[14] In the 1990s the Society therefore 'changed immeasurably' (Lorraine Daston, pers. comm). New Institutes were constructed across the former DDR: in Potsdam, Halle, Dresden, Leipzig, Magdeburg, Jena and Rostock, and hundreds of formerly East German scientists invited to fill them.

Die Wende (the transitional period after reunification) also inaugurated a new era of more profound internationalisation for the Society. Since 1948, it has always remained firmly international in outlook; yet it is fair to say this was intensified in the 1990s with the reemergence of a unified Germany as a powerful nation state on the world stage. There was an increasing surge towards the recruitment of foreign directors, one which had a 'snowball effect' on the recruitment of foreign scientists (ibid): as they often brought compatriots with them, and other non-Germans were encouraged to apply for positions.

14 'Die Max-Planck-Gesellschaft solle in den neuen Ländern die gleiche Rolle einnehmen, die sie in den alten Ländern innehat' (from the speeches of Hans F. Zachers at the General Meeting, 1993).

Meanwhile internationalism became a persistent topic of debate. Symposiums and discussions were held at the Max Planck conference centre, Ringberg Castle, around the themes of 'Mobility of researchers in the European Union' (1993), 'The tension between nationalism and internationalism' (1995), and 'Internationalism in research' (1996). Like other 'corporatized' scholarly institutions, the MPG has also begun to expand more extensively abroad (Schrecker 2010). There are now no less than five standalone Max Planck Institutes outside Germany: in Italy, Holland, Luxembourg and the U.S, and this number appears to be one they are keen to increase.

ii) The Max Planck Society today

In Germany, the region of this study, the Society is a union of seventy-five separate Institutes relatively evenly dispersed across all the *Länder,* each with an average of four directors and their own unique research direction. Oddly, this plurality and dispersion seems to be a remarkably little known fact. Indeed when explaining my research to others, so often did they assume that the 'Max Planck Institute' was just one place (and please could you say hello to so-and-so) that I began to see such confusion as ethnographic in its own right. An American scientist working for the Society believed the MPG did something 'really smart' by giving all their Institutes the same name. 'It means that no matter who you talk to they think it's one Institute. They're like "Whoa! You're working at the Max Planck Institute!"…The brand name is really well known, so no matter what field people are working in, they'll know it'. For me however, this interpretation does not quite reach the nub of the problem. When the KWG was reincarnated as the MPG in 1948, there was significant pressure from the Allies to render the Society plural, calling the collective 'Institutes' rather than an 'Institute' or 'Society', because of the toxic association of the Kaiser Wilhelm *Society* with the Third Reich (Heinemann 1990: 408). Way before any research organisation concerned itself with 'branding', the tenacity with which the idea of a unitary

entity was clung to – despite the significant influence of the Allies at this point – shows the degree to which it incarnated an important cultural logic.[15]

Consistent with the argument laid out in the introduction, this logic is the second kind of holism I identify: a social group articulated in individual form. The language of holism is even used in the Society's official discourse, 'An important factor in the success of the Max Planck Society is the commitment of Scientific Members to think beyond their own departments in the interest of the Society *as a whole*' (emphasis added).[16] Calling the Society 'Max Planck *Institutes'* would fracture this we-principle. Any social group is ontologically prior: a unity (The Max Planck Institute), and a unity that is often expressed through the symbol of a single human being, in this case the Nobel-Prize winning German Physicist, Max Planck.

Before moving onto the particular context and unfolding of this thickly qualitative study, some basic quantitative demographic and financial information about the organisation will be necessary. At the time this research was undertaken there were 21,831 employees working across the Society as a whole.[17] Of this sum: 277 were directors and scientific members (219 of whom work in the natural sciences), 6707 what I call 'senior scientists' (all those at postdoctoral level and above), 5908 what I call 'junior scientists' (all those at doctoral level or below), 865 visiting scientists (which may be either), 4261 administrative staff, and 3813 technical workers.

The nationality of its employees also has a subsequent pertinence to my argument (particularly chapters 5 and 6), so I will also enumerate the numbers of Germans and non-Germans as far as the data permits. Of the directors, 30% of them claim foreign nationalities, while among all scientists the total percentage of foreign workers is 34.8%. There is no available data for the organisation as a

15 Of course now the Max Planck 'brand' is of the utmost important to its public relations team. But this kind of corporatization did not appear until (much like other research organisations and universities) the 1990s and early 2000s.

16 http://www.mpg.de/39586/MPG_Introduction?page=3

17 Data valid as of 1st January 2012, see Annual Report 2011 (2012).

whole, but in the first Institute I visited (the Primary Institute), this is highly concentrated at the postdoctoral level, 90% of whom come from abroad.[18] Of the entire workforce however, just 17.3% claim foreign nationalities. This suggests that, although there is no explicit data for this group, among the administrative and technical workers in the MPG the number of non-German staff is almost negligible.

Meanwhile the current financial structure of the Society is reasonably similar to the one laid down at Königstein, with a few caveats. Taken as an aggregate, the proportion of public funding supporting the Society is now only 80%: 40% of which comes from the Federal Government, and 40% from the State (*Land*) where the Institute is located. The remaining 20% comes from 'third parties'. These may be federal research organisations like the German Research Foundation (*Deutsche Forschungsgemeinschaft* or DFG), the EU, extra-European project-based funding or donations from private individuals. It is also partly drawn from industrial and commercial sources, although the Society likes to keep very quiet about that.[19] Together, all of these funds meet its annual running cost of approximately €1.9bn, a comparatively small sum considering its spatial distribution, and roughly the same as just one American university – a director tells me with a measure of pride.

iii) Ethnography

I spent a total of fifteen months doing active and partially itinerant ethnography inside the Max Planck Society (including a three month break for data processing), spread over a period of twenty-six months from June 2010 to

18 Participants from other Institutes also suggested the number of foreign postdoctoral scientists was equally high.

19 The MPI for Iron Research and the MPI for Coal Research, both in the state of North-Rhine-Westphalia, are in fact both formally Gmbhs, financed half by the Society, half by Industry. In other 'e.V' Institutes however, a small proportion of their funding will also be drawn from private sources.

August 2012.[20] During this time I visited four separate Institutes (all oriented around natural sciences), the Administrative Headquarters in Münich, the Max Planck archive in Berlin-Dahlem, and the Max Planck castle, *Schloss Ringberg* (Ringberg Castle) in the Bavarian Alps. Because all these locations had some intrinsic relation to the Society as a whole – a community forged through collective gatherings such as the Directors' *Hauptversammlung* and the meetings of the *Betriebsrat*, not to mention the powerful 'imagined community' (Anderson 1991) generated by an enormous volume of print culture and a slick website – I do not consider this methodology 'multi-sited' in the conventional sense (Marcus 1998).[21] I was not revealing relationships by moving through them. Instead I experienced all of these places as iterations of one phenomenon with its own existential integrity, which preceded and outlasted my passing. This integrity was particularly pronounced when I moved from the first Institute in Berlin-Brandenburg (hereafter the Primary Institute) to the second Institute in North-Rhine-Westfalia (hereafter the Secondary Institute): the sites at which I spent the first continuous nine months of the ethnographic process. Of course there were subtle differences in moving from East to West, yet what struck me most was how the 'principles' I identify remained constant. These Institutes will remain anonymous to protect the identity of those directors who welcomed me in, although I will now paint a picture of them to offer the reader a sense of place.[22]

The Primary Institute is situated on a science park on the outskirts of Berlin: the city where I – and many of my colleagues at the Institute – lived. To get there thus meant commuting from one of Berlin's major train stations, and as so many of us had chosen to live in the city and make the trip each day, dozens of scientists tumbled out at the local station each morning to be greeted by these pleasant bucolic surroundings. In summer the ten-minute walk which ensued,

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20 Fieldwork timeline: June 2010 – December 2010, Primary Institute; January 2011 – February 2011, Secondary Institute; March 2011 – May 2011, data processing; June 2011 – July 2011, return to Primary Institute and visit to two further Institutes; August 2012, visit to Ringberg Castle and the Administrative Headquarters in Münich.

21 In addition to the comprehensive 'Bi-annual reports' every Institute will publish as part of its evaluation process, the Society also publishes several magazines and newsletters in both English and German. These include: 'Max Planck Intern', 'Max Planck Research' and the 'Max Planck Journal', as well as a whole host of informative pamphlets.

22 The Institutes will still be recognizable to those familiar with them, however in the era of keyword searches, choosing not to name them gives their occupants a layer of anonymous protection.

from the village station to the Institute, was a delight. We would chat convivially in sleeveless tops and sunglasses. As the sun beat down, a brightly coloured mass of long grass with wild flowers in yellow, red and purple that hugged the road, reached upwards to meet it. In winter the scene was rather more bleak. Armed with thick winter coats against the cold easterly wind, in temperatures of up to minus ten, we crunched silently along the shallow passage cut into the snow by previous footsteps, focused upon our destination like an Alpine battalion. A few hundred metres beyond the station the road curves to the left, and the compound of buildings which form the Institute come into view, until then occluded by boxy grey and blue start-up companies which sit alongside it. The first building one apprehends is the 'Guest House', a shining neutral white, in contrast to the sleek dark grey and flashes of colour of the buildings next to it, housing laboratories and offices.[23] On reaching these, our professional home, we reach for our ID cards to open the large automatic glass door.

Inside the building colour abounds. Dirty pinks, terracotta oranges, and ocean blues cover the walls, while framed scientific technicolour photographs hang from them like modern art. A series of lush overlarge shrubs are planted directly into the ground floor, wonderfully disturbing the boundaries between inside and out, and a capacious airy library, spread over three levels, looks over them. Everywhere, large windows give the main spaces a generous open feel. The corridors into which scientists trickle off to reach their labs and offices, do not share this voluptuousness however: their walls and doors coloured in predictable 'view-from-nowhere' greys and whites. At the end of each of these corridors is a small break-out area: with table, chairs and sink, and again lined floor-to-ceiling with glass, giving us the opportunity to gaze outside, at the green and yellow fields in the distance, or the metallic modern sculpture in the foreground.

There are a few characteristics of the compound's architectural layout, which both betray and encourage its social divisions and continuities. The first is that the Institute's administrative offices are housed in an entirely separate

23 Cf. Chapter 6.i.

building to the one in which scientific research takes place, accessible by a covered walkway, or a short trip across the courtyard. Thus the oft-stated claim of being 'non-bureaucratic' is materialised through the expulsion of bureaucracy from the palaces of research. In this same central building are the mechanical and electrical workshops, giving the communities of 'fine mechanics' and engineers which populate them, more autonomy from the departments, than the laboratory technicians who share space with the scientists. Within the departments, scientists and technicians will share up to four to one room, with group leaders sometimes given their own small office. The directors, meanwhile will often be situated on the top floors of the building, with large comfortable offices accessible through the ante-chambers of their secretaries'. The substantive qualitative difference that I posit between a director and even his immediate subordinate, a group leader, is visible at a glance from the Institute's architectonics.

The Secondary Institute is again near a city, this time in the *Land* of North-Rhine-Westfalia, on the French border, and my commute is now rather more straightforward, being just a fifteen-minute walk from my flat. As I make my way there each day, I begin to realise I do so on a maze of names; Germany's heroic tradition is inscribed into its very streets. Each sunny morning I trot down Humboldtstrasse, bisect Herderstrasse, only to reach Schillerstrasse, finally ending up on Max-Planck Strasse, on which the Institute is the one and only resident. It is a simple but elegant dark brown brick rectangular building, with slim horizontal windows of those rather elongated proportions that one sees across Germany. On its right hand side sit the multi-storey offices of German communications and industrial companies – to which scientists often go for lunch – while in front is a small car park for Society employees.

This is one of the few remaining Max Planck Institutes that was founded under the Kaiser Wilhelm Society, and which continue to pursue research today inside the very same building. It is therefore fundamentally different in character to the shiny and exuberant Primary Institute which was designed and constructed in the 1990s. On entering, its dense historicity is immediately tangible. The entire wall adjacent to the stairwell – which one must ascend to reach reception – is

covered with a striking bronze and stainless-steel low-relief, depicting booted and hatted workers labouring in steel production, a silver river of which runs from top to bottom. Meanwhile elsewhere in the interior, its comparatively antediluvian past is expressed through multiple material cues. Life-size bronze busts of eminent German scientists and former directors reside in corridors and stairwells. Small museum-style display cases are propped up against walls, holding treasure troves of obsolete technology: early scientific cameras and measuring devices, many aesthetically encased in hinged orange-brown wooden boxes. On one landing there is a photographic reproduction of Max Planck himself, with his characteristic gauche gentility, symbolically knocking in the Institute's own foundation stone with a small hammer. One of the workshops even has a primitive metal forger – that still works – which was assembled along with the Institute in the 1930s.[24]

Nevertheless it is architecturally similar to the Primary Institute in the sense of being a compound of contiguous structures – some of which are conjoined by covered walkways – rather than one all-encompassing unit. The area I arrive at through reception comprises one of these, a building with several floors of laboratories and offices, with the small administration occupying one particular wing. The department in which I spend most of my days is in another one, as are the workshops. Here it strikes a contrast with my previous host, in which the latter are located separately, alongside the administration. On leaving the department's main corridor which hosts the director's office, I am steered perpendicularly onto another with a line of scientists' offices on the left, and on the other side just a waist-high balcony with glass above it. The scene which manifests itself below as I walk forward consists of four successive warehouse-like spaces: the first akin to a storage room, full of boxes of various kinds, the second an animated workshop, and the third and fourth also clearly workshops of a sort populated with metal-treatment machinery, but rarely ever people.[25] Manual work, as is evident too from that relief, is not something shameful and hidden away, but rendered fully – even voyeuristically – visible to anyone visiting the department. My office meanwhile, is situated in yet another unit of

24 Cf. Chapter 5.vii

25 The second workshop is described in detail in Chapter 5.i.

the compound: a large atrium-like hall with single and multiple-occupancy offices and seminar-rooms along the side, and a host of bulky metal-testing machines – some over twenty-feet high – on the concrete floor in the middle. Like the machinery in the third and fourth workshops these appear to be rarely used. Some of them date from the 1960s and 70s, and I am told many are soon to be gotten rid of, to make space for the research programme of a new director.

The fieldwork process as a whole involved a total of eighty-six participants: fifty-eight from the Primary Institute, twenty-one from the Secondary Institute, four from the third Institute, two from the fourth, as well as one interlocutor from the Max Planck Administration. Of this eighty-six: nine were Directors, fifty-four scientists, and the remaining twenty-three technicians.

I have designated 'participants', those individuals who were willing to engage in at least one formal conversation, and whose testimonies are included in the fieldnotes, although may not have made it in any obvious way into the thesis.[26] Some of these were digitally recorded, while others were recorded manually. In some cases I shared up to four of these semi-structured conversations with the same person. With the directors these almost always took place in their private offices; with scientists in some public area such as the Institute library, break-out area, or canteen, or even in a café or restaurant outside the Institute; and with the technicians most often in the laboratories and workshops they worked in.[27] In contrast to the scientists, technicians were often more loquacious and relaxed when surrounded by the familiar comfort of their equipment, which often became elicitation devices for our discussions. This formal count does not include the extended group of people with whom I attended various social gatherings as a fellow member of the Institutes: seminars, group meetings, conferences and talks, as well as a four-day trip to the Baltic coast as part of one department's annual 'retreat'.

26 As a consequence this does not include the many others whom I met and conversed with in a casual capacity, or those with whom I was familiar, yet who did not feel comfortable overtly taking part in the ethnography.

27 Although cf. Chapter 4.vii for an account of conversations with directors outside their offices.

Access to all of these sites was relatively straightforward, and where this was not necessarily the case (as for instance with the castle) it has become part of my ethnographic account. Predictably, the single most important gatekeeper in each department is the director, and it was these individuals who were either open and excited at the prospect of an anthropological visit, or not as was sometimes the case. I first made contact with one director from the Primary Institute in early 2010, suggesting an initial visit of four months (which ended up being extended to seven), and he was enthused by the idea being keen on interdisciplinary collaborations in general. Near the end of my stay he put me in contact with another ('who might be open to these kinds of things') from the Secondary Institute, and with whom I spent a subsequent two months. I came to the third Institute in June 2011 through a friend of Michael Taussig, who had generously provided me with contacts in Berlin, and visited the fourth at around the same time simply by emailing its directors cold. One of them in fact turned out to already be the research participant of a well-known sociologist of science, demonstrating what was probably true for many of them: that they had prior sympathies for social research and thus were intrigued by the prospect of participating in such a study.

iv) Reflexive objectivity

Having provided an overview of the Society in historical and contemporary perspective, and laid out in a straightforwardly empirical manner, the context and content of the ethnography, it behooves me now to explore my own situatedness in more depth.[28] If the person of the ethnographer is the primary research tool, how has that tool been put to use? I refer to two kinds of situatedness in the following sections: 'reflexive objectivity' and 'reflexive subjectivity'. By reflexive objectivity I mean the manner in which I was apprehended, appropriated, understood or misunderstood in both conscious and unconscious ways as certain kind of 'thing' inside the MPG –researcher,

28 The previous section in particular is significant for me vis-à-vis my obligations to my participants, many of whom have expressed an interest in reading the thesis, and as scientists would wish to know from exactly which sources I have drawn my data.

scientist, spy, government agent, guest or mirror – and the spectrum of epistemological consequences this objectification had. Meanwhile reflective subjectivity implies the instincts, interests, and socio-political exposure I have and have had as a human subject while undertaking this project, again with reference to the specific impacts on the study.

On arriving at the Primary Institute, my immediate identity was one of fellow researcher. This was made particularly apparent during the first few days of fieldwork, when I am invited to join in the bi-monthly process of cleaning one of the large experimental labs. Keen to get stuck in, fade in, and with the doctrine of participant observation ringing in my ears, I make an attempt at being useful by washing up some beakers in the sink. The junior scientists seem a little surprised, but carry on with the frenetic business of filing away rogue samples and wiping down table–tops. Minutes later, the senior scientist in charge sees me there. Aghast, he instructs me to remove the marigolds immediately, 'You don't need to *help* us, I thought you wanted to observe the cleaning process?' So came the first lesson in community appropriation. The MPG takes the business of research enormously seriously, and so I as a researcher, should be allowed to perform my task unobstructed, as they saw it. As a consequence despite my protestations, I was accorded an almost entirely non-functional role throughout the organisation for the duration of fieldwork. The only tasks besides research that I was permitted to undertake, were those appropriate to a knowledge–worker, namely: proof–reading scientific articles for English language and grammar, translating departmental protocols from German to English, or giving seminars about my project.

This is one particular way to encounter an organisation. Among anthropologists who have carried out similar studies, their methodology generally falls into one of two categories: what I call 'omniscients' (Born 2004, Kunda 1992, Sedgwick 2007, Traweek 1988) and 'residents' (Mosse 2006, Latour and Woolgar 1979, Pellegram 1998, Riles 2000). Omniscients – like myself – assume a non-productive role within the community, transcending social strata in the process. An omniscient methodology is more likely to be successful when this has been fully negotiated prior to beginning fieldwork, as it

may be difficult for communities to accept the degree of movement the ethnographer would wish for: full social mobility usually being the sole property of those with the highest status (Perwez 2008). If it *is* sanctioned however, omniscience presents a unique opportunity to view the organisation from multiple perspectives. The danger of course, is a lack of depth in any one of these. Residents meanwhile, are situated within one sphere of the organisation, often being employed in some formal capacity and performing some kind of formal work within it. A resident has the obvious advantage of being able to profoundly experience the organisation from one point of view. This is also its drawback, as it forecloses those of others. In short, if the organisation is an apartment–building, residents are tenants occupying one room with a formal contract with the landlord, while omniscients are more like porters, with keys to every door, from the basement to the penthouse suite.

As a result I was able to move up and down the ranks of this small society. From director, to group leader, to independent researcher, to post-doc, to Ph.D. student, to intern, to student–worker, I was theoretically free to ask employees about their histories and future plans, the nature of their work and their attitude towards it. In some cases I spent many days trailing single individuals, following the rhythms of their days rather than simply interrupting them. Crossing social strata could have its advantages. Scientists were often reassured, and sometimes even a little impressed, that the director was also taking part, 'You mean you talked to him just like we are talking now?' However it is impossible to ignore the fact, that it was precisely in crossing social strata that rendered them significant. It was the Society's refusal, in their veneration for research, to weigh me down with a practical role, that made possible the conceptual holism this thesis adopts.

As well as being a researcher in the general sense, it was also assumed I was a scientist in the specific. This stemmed partly from the German linguistic collapse of all academic activities into science, '*Wissenschaft*' (which can mean both science and scholarship as a whole); but also from the ubiquitous assumption that 'anthropology is a science' through which my participants appeared to reassure themselves somewhat. The natural corollary of this was that

my project would be carried out using ‘the scientific method’: namely one which is linear, systematic, and always, always, always, hypothesis–driven.

The major consequence of this was a misappropriation of instrumentality on my part. My haphazard wanderings between individuals, based almost entirely on who I had gotten talking to, were described as ‘all part of the method’. They were always trying to work out what that method was, and presented me with a barrage of questions to find out: ‘So what is interesting for you?’, ‘What kind of data are you collecting?’, ‘In terms of your experimental planning, how do you plan?’ The extent of their inquisitiveness seemed to know no bounds. A director once told me a story about a Scandinavian film he had seen in which a management consultant was sent into a small Swedish community to observe how people lived. The consultant sat on a high chair in the kitchen of one of the houses, observing and noting down events as they unfolded. After a while, the old man who lived there became so irritated by this, that he went to the room above the kitchen, sawed a hole through the floorboards, and started assiduously observing the consultant and taking notes. Their endless questioning was a little like sawing through those floorboards, an attempt to scrutinize the reasoning behind my recording, just as they felt I was scrutinizing them.

However the assumption that I was following some kind of systematic method could at times diffuse into a generalised paranoia. One scientist asked if what he said would be going on his ‘file’, while another half–jokingly whether I was a ‘spy from Munich’, the site of the administrative headquarters. The problems this posed to my relations with the scientists were fairly minor. However it did introduce a level of second–guessing from some participants which made my interactions with them rather strained. It was only many months later after returning from the field, that I came to realise that there was in fact a structural pattern to these strained relations: they were all senior scientists in non-permanent positions. The affective character of my interactions thus later became a fundamental tool in forging some of the thesis’ major analytical positions.

My identity as a *Wissenschaftler* among the technicians meanwhile, had a different range of effects.[29] Where scientists were bubbling over with questions, the technicians seemed more comfortable accepting some degree of opacity, just as they did not need to understand the theoretical intricacies of every experimental project they assisted. On one occasion I overheard a technician joking benignly with her colleague in an aside, '*Ich habe keine Ahnung worum es geht*' (I have absolutely no idea what it's about). However, a lack of comprehension could again slide into personal projections, particularly about the practical purpose of such *Wissenschaft*. I was amazed to hear, in the very final weeks of my ethnography within one department with which I had had a lengthy relationship, and in which I had given numerous papers and answered numerous questions, that a technician I had worked with asked a group leader in all innocence, whether my study was related to the recent initiative of the German government to introduce *'Leistungsorientiertebezahlung'*: performance-related pay. In hindsight I recognise how unprecedented and confusing my presence within the Society must have been for them: particularly in hierarchical terms. If one of the effects of hierarchy is to fix definitions of the person, the uncanny quality of my identity as a scientist must have felt cognitively dissonant. I was told some of the technicians felt 'uneasy' because I did 'not fit into the structure': 'they didn't know whether to obey you'.

My third identity meanwhile was as a 'guest'. In the Primary Institute this was largely produced by one senior scientist, under whose care I was put for the duration of my stay. He was to be my first point of call for any questions or concerns, and maintained a watchful eye over my progress, expressing a kindly attentiveness that I was getting the information I 'needed', and shone with approval on the perception that I was 'well integrated'. This was what Michael Agar would call the 'professional stranger-handler' of the community (1980: 59), as he sometimes made reference to the 'looking after' of other visitors besides myself. It was an activity which took up a great deal of his time he told me, 'you have to organise a whole day for them. And we take this quite seriously. We want people to feel comfortable'. Unlike the visitors of the Stanford linear

29 Incidentally my work with the technicians presented the greatest methodological challenge for a number of reasons, which is why some of this material has been integrated into Chapter 5.

accelerator Centre – referred to as ‘users’ (Traweek 1988: 16) – I and all of the several hundred other visiting researchers in the Max Planck Society annually were there formally as ‘guests’ (*Gastwissenschaftler*). Another scientist there for just a few months, told me how overwhelmed he was by the generosity of time and energy he had been given: ‘Sometimes I feel like they will push aside everything they're doing because I'm there with a problem, and they want to deal with it right now because I'm a guest’. The extraordinarily thoughtful and carefully managed way in which I was apprehended as a guest in all of the Institutes I visited, brought me to a fuller awareness of how significant the guest/host relationship is to the Max Planck Society. It is one mode through which the logic of precarity is effectively managed, without diluting the socio-centric integrity of its internal communities.

The final thing into which my identity shape–shifted was a mirror: one onto which participants could render visible some version of themselves or their own understanding. For some, this process of elicited reflection appeared to offer catharsis, a sense of relief almost, that in a world where individual biography has become intensely ‘individualised’ (Beck 1992) there was someone there to bear witness to their plans, projects, and experiences. Towards the end of my dialogue with one scientist over a glass of wine in Berlin, he concluded, ‘I must say, when I'm sitting talking with you, and I think back, I'm really proud of how things went’. It was generally among the international scientists that I assumed this mirroring function, although it could be the case for directors too if our encounter was a fleeting one. Among technicians, the mirror almost always reflected an image of proud industry, and how this contributed in some positive way to the work of the Institute. Unprompted, one workshop technician insisted on taking me round the whole compound, and it was only halfway through that I realised it was a guided tour of his achievements: technical artifacts he had designed and constructed himself. The only thing to say epistemologically about this role, was that it was in the glass of the mirror, that the majority of the individual testimonies that pepper this thesis first appeared.

v) Reflexive subjectivity

The ‘meta-language’ (Moore 2009: 210) of research that I and the scientists shared, led to a series of discussions about epistemology: mostly orientated around the role of ethnographer and its impact. In the course of these discussions, I often found it challenging to impress that the data produced by a human being (rather than a machine) could also form the basis of scholarly knowledge. One participant maintained that the validity of anthropological knowledge was rendered void by the very nature of its production being ‘person–dependent’ (somehow missing the irony that the Max Planck Society proudly proclaims itself as ‘person-oriented’). The most reliable study would result, in his view, from planting ‘hidden cameras’ and requesting ‘access to everyone's e-mails’: a ‘mechanical objectivity’ (Daston and Galison 2007: 115-190) which performs its own truth claim by erasing the subject from view. On the contrary – quite apart from being ethically indefensible – as the previous section goes to show, it is precisely in the fires of interaction between research and researched that new forms of knowledge are authenticated. Ethnography does remain quite brilliantly person–dependent, and I shall now reflect as far as auto–analysis and relevance permits, what my person brought to the interaction, to make that fire crackle in a particular way.

The first thing to note is the epistemological stance I came to assume, namely that ethnography is an art and not a science. Here I run with an emerging pack of scholars who have made a departure from the swathe of ethnographic manuals published in the 1980s, which sought to renew ethnographic authority by means of systematic vigour (Agar 1980, Hammersley and Atkinson 1983, Bernard 1988). Like Holbraad's insistence, following Roy Wagner, on anthropological truth as ‘invented definition’ (2009: 87), Luker's thesis that the social scientific method should model itself on ‘salsa dancing’ (2008), or most comprehensively, Harry Wolcott's case for the ‘art of fieldwork’ (2002), the ethnographic method for me became a clear sub-species of the artistic rather than scientific genus.

The guiding principle which draws ethnography into the world of artistic production is what E. L. Feinberg calls 'the authority of intuition' (1987: 147).[30] In other words, attempts at being 'systematic', i.e. progressing in a way external to the process of thinking, I always found somehow singularly unhelpful. The only way forward was to leapfrog from intuition to intuition, pursuing those which vibrated at the highest frequency. Fieldwork for me, was quite literally, *feeled work*.

Yet what did this mean pragmatically? Aside from being mostly very far removed from the instrumentalism projected upon me, the major consequence was a change of topic. It was *feeled work* and not fieldwork per se which nurtured my interest in, and understanding of, hierarchy. I had arrived in Germany with the intention of examining the implicit philosophy of a particular scientific practice – which for the sake of anonymity I will not describe. Yet even within the first few weeks there were large sub–headings in my fieldnotes reading 'Max Planck Culture – time and flow', 'Max Planck Culture – hierarchy vs. egalitarianism' and 'Max Planck Culture – Director', with anecdotes and reflections beneath. Hierarchy was inscribing itself into my account. However it took me more than six months to consciously recognise what was happening. So tenaciously did I cling onto the original project (and still under the spell to some degree of that 80s notion of systematicity) that the ultimate about–turn I took was a dramatic one. Letting go and acquiescing to the intuitive and spontaneous nature of the ethnography and where it was heading, I finally embraced the new topic with alacrity.

The second way in which my own subjectivity played itself out was in relation to ethnicity. Being a mixture of Scots (where I was raised), Iranian (from

30 Feinberg is not suggesting intuition has no role to play in science. In mathematics, he posits, intuitive guessing may predict the result of a given problem (1987: 31), just as my participants might unabashedly refer to their "physical intuition" when interpreting a graph. However, a subsequent process of logical reasoning must calculate and thereby confirm that the result is correct. It is only this logical sequence which *proves* the result, in the final analysis the part played by intuition is discarded. As he says, 'Here intuition plays the role of a temporary operation or an auxiliary weapon in the work' (ibid: 31), 'auxiliary' being the operative word here. In artistic activity, intuition plays a *primary* productive role, and the creative process may progress without needing to be retrospectively validated through other means.

my mother's side), and English (from my father and part of my education), I was a fully paid-up member of the 'international' cohort of the organisation. In typical Max Planck style, where foreignness is integrated into the substance of the community through the ritual consumption of ethnic foodstuffs, I was pressed, 'When are you going to cook a haggis for us Vita?' (Sadly it is rather difficult to source in Germany). As a result the richest relationships I developed seemed to always be with non-Germans. Just as in my off–duty hours I became involved in the British, French and North–American social worlds of Berlin, a sense of shared deracination acted as a powerful social glue.

Finally, I feel it is important to be frank about the socio-political context in which this thesis was researched and written. This is in several ways a piece of work which emerged amidst the wreckage of the 2008 financial crisis. Not simply chronologically (I started in September 2009) but also in terms of the questions it raises and the critical narrative it draws. There was a particular flow of history which ended in 2008, instigating intense academic and social debate about the nature of the age it had concluded: a story which most traced back to the 70s and 80s. I see the rise of 'agency' and 'action' theory in the social sciences as intimately connected to the political settlement of this self–same age, and its passing necessitates an urgent reappraisal of these terms. All those having to cope with the deleterious effects of the new order are far more likely to be familiar with concepts of constraint, than any Panglossian notion of a universal 'agency'. Likewise an analysis of the so–called 'tough decisions' European governments are making under the banner of austerity, as to what parts of society should be protected, and what disposed of as 'waste', cries out for a Dumontian interpretation, to situate such decision-making within much broader hierarchies of value.[31] It is significant that Elizabeth Povinelli has very recently edged towards a 'post-Durkheimian functionalism' (George 2012) to theorise late liberalism in holistic terms. At this early stage it is impossible to reflect fully at

31 Thankfully, the tide may finally be turning. There is recent evidence of a resurgence of anthropological interest in values 'after a long period of neglect' (Robbins 2013), accompanied by a resurgence of interest in Dumont. The journal *Hau* very recently published a Special Issue entitled, 'Value as theory' (2013), with Dumontian contributions from Joel Robbins, André Iteanu and others, as well as a reprint of Dumont's 1980 lecture 'On Value'. I shall engage with some of the arguments in this Special Issue in the conclusion.

the meta–level, on how the intellectual content of the thesis was influenced by its wider socio-political environment. Nevertheless these are some strands which are perceptible now.

3. Locating the Max Planck Society's Value-Idea(s)

'This is how it is supposed to work'

Group Leader

The overarching structure of the Max Planck Society is like a scaled-down version of Germany's Federal Republic. Many powers are delegated to the local level, the level of the Institutes, but others, the most significant ones, are retained at the collective level and apply to the whole Society. The following chapter approaches the question of how the organisation is cohered at this collective level. I will not describe in any comprehensive way the Society's complex formal system of internal governance (such as the functioning of the sections), nor provide an exhaustive account of its bureaucratic operations, but rather highlight the features of collective life which are most anthropologically illuminating. I explore here how the Society is ideally 'supposed to work' without delving too deeply into how employees might themselves experience it (the subject of later chapters) – although some participant perspectives will still appear. These features are the following: the Society's primary ideological basis, the Harnack principle, how this squares with its system of internal evaluation known as the *Fachbeirat*, the symbolic significance of its castle *Schloss Ringberg*, of its bureaucratic headquarters, and of its Minerva logo. Finally I highlight the notion of 'excitement' which is intended to govern the Society's spiritual life.

The analytical focus of this chapter is two-fold. Its broad purpose is to reveal ethnographically, the 'set of ideas and values' (1980: 343) – which for Dumont is synonymous with ideology – that cohere the Max Planck Society as a social whole.[1] This configuration of ideas and values, in which how the Society

1 Ideology is a term Dumont uses throughout his work, and although brief, the definitions he offers are consistent. It is the 'social set of representations; the set of ideas and values that are common in a society (1986: 279). These 'representations' for Dumont tend to be overwhelmingly linguistic. He emphasises the 'common language' (1980: 343) that members of a society share, which is the 'vehicle' (1986: 2) of their ideology. (My usage of imagery and

operates is identical to how its members feel it *should* operate, is discernible in a whole range of phenomena its employees are exposed to. Whether the idiosyncratic mechanisms of internal evaluation, the periodic 'retreats' in its Bavarian castle, or the range of imagery and discourse, there is a basic commonality of experience shared by all of my participants while employed by the MPG. Consistent with the hierarchical precept that togetherness precedes differentiation, it is important to identify certain threads which bind this social whole together, before moving – later in the thesis – into variation. The second purpose is this. Although societies may incorporate a multitude of ideas and values, for Dumont, some will prevail over others in their relative significance. There is always one 'value-idea' – what he elsewhere calls 'predominant ideology' (1994: 199) – which gives shape to the hierarchy of value. This single value-idea is present, at least partially, in all of these phenomena as I will go on to show, but receives its fullest expression in the mythological force of the Harnack principle.

Those supra-personal phenomena which give organisations their character have long been a concern of anthropologists. Mary Douglas in her influential *How Institutions Think* (1987), made an effort to grapple with precisely this: arguing vociferously against individual rational choice theory in favour of the possibility of relational cognition through institutions. It was the latter – which for Douglas are 'minimally…a convention' (ibid: 46), but presumably maximally an organisation like the MPG – which did the thinking through the minds of individuals, encouraging certain kinds of thought and discrediting others. For Douglas, institutions confer identity, classify, remember and forget, and make life and death decisions. This is certainly the case with the internal conventions of the MPG as we shall see, which reproduce the forms of 'co-operation and solidarity' (ibid: 1), that Douglas seeks to explain. However,

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material culture in this chapter, is thus not quintessentially Dumontian). The other kind of ideology that Dumont and others tend to contrast his with is Marxian (Dumont 1980: 343, Kapferer 2010: 196). There is nothing false or illusory about Dumont's ideology (as there is for Marx) nor is it the sole property of a ruling class. It is rather 'central with respect to the social reality as a whole' (1980: 343). However there is an implicit ambivalence here, because the whole premise of hierarchy assumes that some social groups (i.e. Brahmans) embody (and therefore stand to benefit from) a society's ideology more than others. My thesis perpetuates this ambivalence. While the value-idea(s) give shape to the whole order, they also lend a powerful legitimacy to the director's pre-eminence.

from the perspective of this study, Douglas' emphasis appears rather too democratic. Her fixation on the collective nature of thought – one which any anthropologist would applaud – neglects to explain how certain groups might benefit from certain kinds of institutional thinking and therefore encourage them.[2] While recognising that communities are forged through shared values and ideas, she gives short shrift to their social fall-out: the negotiated ways in which elites and subalterns are created therein.[3]

On the contrary, Christina Garsten in her ethnography of Apple Computers (1994), is more emphatic about the asymmetrical social formations in which value-ideas are embedded. She documents the diffusion of an 'Apple value system' (ibid: 56) through videos, slogans, and simulation exercises at various corporate 'orientation' and 'new employee integration' programmes (ibid: 52), identifying four pairs of value-ideas in the process. For Garsten, these conventions are not simply expressions of collective cognition, *sensu* Douglas, but ones based fundamentally on a Hannzerian core/periphery model. Her multi-sited research in Stockholm, Paris and Cupertino, California – the site of the company headquarters – enables her to trace the 'effective dissemination of meaning from the organizational core' (ibid: vi). This result of this is that Apple values – essentially a version of American values – are deployed as the primary frames of experience in the European periphery. Unsurprisingly, this dissemination is never completely successful. At these subsidiaries in Sweden and France, American value-ideas lose some of their potency, becoming mixed in with, or broken down by, competing versions.

It follows from this that any discussion of value-ideas (or ideology) has to confront the points at which they inevitably fail. Dumont made quite little of this, calling such contradictions in the caste system evidence of a 'residual component' (1980: 39) which simply gets tacked onto the predominant ideology

2 As Michael Herzfeld says, 'She pays less attention, however, to the ways in which these systems may continue to be manipulated by canny actors' (1992: 68).

3 She does however, relate an anecdote about the distribution of food in a famine. The social order in question defines who will survive and 'who is predestined to starve' (1987: 123). However, the very language of being 'predestined' to starve neglects the processes which lead to some actors starving.

in the equation o = i + r (observation = ideology + residual) (ibid: 38). For scholars like Gupta (2000), Dumont's intensive scrutiny of Brahman value-ideas at the expense of those of other castes undermined his overall thesis; and while I cannot comment on the Indian case, it is true that this was the approach he took to the European material: his later texts on modern ideology based exclusively upon a few key texts in the European canon.[4] Yet in my study, despite being profoundly productive of a certain category of person – namely the directors – the simultaneous failure of value-ideas/ideology to encompass the experiences of all actors remains significant. While chapters 5 and 6 are efforts to expound parallel principles to that of Harnack, I end this chapter indicating the failure of a discourse of excitement to be unanimously echoed in the senior scientific experience. The main problem with the ideology of charisma is that not everyone gets to be charismatic.

i) The Harnack principle

The Max Planck Society's so-called 'structuring principle' is characterised by a curious blend of oral ubiquity and textual elusiveness. One director who is clearly a great supporter of the idea (a question which bifurcates directorial opinion), and makes great efforts to ask if I 'know about' it on three separate occasions with much enthusiasm, tells me with conviction that it is 'written in the statutes'. Intrigued, I go straight to the source, which by virtue of the MPG's ethic of transparency is easily available online.[5] It is no-where to be found; Harnack's name is not mentioned on any one of the fifteen page document. In Article 28 there is a fifteen-paragraph description of a Director's 'rights and duties', which one might expect, would constitute it without naming outright. Aside from various administrative and financial obligations, the main thrust is as that stated on the website, that a Director is 'independent in performing his scientific work', perhaps adding that 'he appoints and dismisses other scientific staff employees and other employees'. Still, this does not tell us very much.

4 Alan Macfarlane calls this, 'intellectual history of a particularly limited kind' (1993: 19).

5 www.mpg.de/197521/statutesMPS.pdf

Intrigued by this mystique, I question a number of colleagues in the Humanities employed in various Max Planck Institutes, whose responses centre unanimously around the conclusion that it is 'mythological'. Mythological because, as Rudolf Vierhaus writes, even during Harnack's lifetime, he described it only in very 'loose and labile' terms, and as a prominent public figure, this was generally in spoken form (1996: 130).[6] There is no formal documentary source available which describes the principle *in extenso*. Indeed it is significant that the website says it is named 'after' Harnack, rather than by Harnack, as 'it was only after Harnack's death that the principle became canonized' by his successors (Vierhaus 1996: 137). It has since been passed down through 'oral tradition' (Annette Vogt, pers. comm.) by subsequent directors. With this in mind, the emphatic way in which I am informed about the principle by some of these individuals starts to make a little more sense. If the primary route of its cultural reproduction is through oral tradition, then it seems logical to tell the ethnographer of the Max Planck Society who will presumably go on to tell others (as I duly have).[7] Hubert Laitko puts it succinctly when he says, 'Harnack's name functions as a personalised symbol for an institutional idea' (1996: 585).[8] Consistent with the tradition of German holism, the Society represents this collective idea through the singularity of an individual.[9]

So what are precise contours of this 'institutional idea', this Dumontian value-idea, this ether that lends colour to all things? By bringing together a range of sources we can circumvent this elusiveness and make a few firm statements, all of which in some way describe the value-idea of the 'charismatic individual' already identified.[10] I will proceed from its most explicit and clear-cut, to its most diffuse and implied, characteristics. It must begin then with the notion of autonomy, or as they like to put it, 'freedom'.

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6 'Eine der ebenso lockeren wie plastischen Formulierungen'.

7 One paper I gave was entitled, 'The Harnack principle and German idealism: inside the Max Planck Society', 3rd July 2012, University College London.

8 'Der Name Harnacks fungiert dann als personalisiertes Symbol einer Institutionalidee'.

9 Cf. Chapter 1.iv.

10 Cf. Chapter 1.v.

Former president Hubert Markl once quoted a passage from the one of the MPG's founding statutes of 26th February 1948 – itself a recapitulation of Harnack's own hopes for the KWG – which articulates this principle of freedom/autonomy very clearly. It was to be a 'union of free institutes, that belonged neither to the state nor to the economy. They shall carry out scientific research in full freedom and independence, without being bound by contracts, only to the rule of law'.[11] It could not be a better illustration of an organisation which seeks to define itself on charismatic principles. All major competing forms of social ordering: political, bureaucratic (both implied in the state), and economic, are explicitly excluded from its system of governance. In conversation, directors similarly take pains to distance themselves from this trinity. Yet of the three it must be said that it is their purification from politics which carries the most punch. As one says, 'The fact that politics is not dictating what the Society is working on is our most highly valued commodity'.[12] The manner in which such freedom is presented is also a perfect example of Dumont's is/ought collapse in the value-idea. Because it is governed autonomously, it performs more successfully. According to Adolf Butenandt it is the Institutes' 'aloofness from government, industry and commerce which has...been an essential prerequisite for achieving important scientific results' (1981: 282).

A second characteristic of this institutional idea is what they call the 'high trust principle', which encapsulates that Weberian dyad of self-generativity and restraint. This is explained on the same internet page from which the original description in Chapter 1 is drawn.

> 'Appointments, made in accordance with the Harnack principle, involve the provision of funding based on a

11 'Eine Vereinigung freier Forschungsinstitute, die nicht dem Staat und nicht der Wirtschaft angehören. Sie betriebt die Wissenschaftliche Forschung in völliger Freiheit und Unabhängigkeit, ohne Bindung an Aufträge, nur dem Gesetz unterworfen' (Henning et al. 1998: 17-18).

12 Although directors make much of their distinction from politics, from an anthropological perspective, directors and politicians are very much aligned, being part of the same horizontal networks of power. Directors themselves may elect to take an active role in politics, meeting domestic and foreign ministers, and taking part in committees on science policy. Incidentally Angela Merkel's husband was himself a former Max Planck group leader.

> profound leap of faith... At a Max Planck institute, when a scientist is appointed as director, he or she is provided with resources until his or her retirement as a scientific member. Depending on the age at which such an appointment is made, this allows for between 20 and 30 years of independent research'.[13]

The idea is that the directors, endowed with this trust in the form of a steady stream of generous funding, should be self-generating: following their own experimental and theoretical programmes, rather than squeezing themselves into extra-murally defined projects. This should also involve knowing what *not* to do.[14] Of course, what the website does not say, is that if the appointment committee is the victim of a 'false alarm' and selects an unworthy candidate, 'you fail and waste 100 million Euros'. But the high trust principle is not just a matter of money. At its heart it is an attitude towards time. It demonstrates how gloriously far Germany has come from the 'politics of cultural despair' (Stern 1961), and the confidence it now has in its own future. This kind of confidence is a charismatic one: the sense that the directors possess an inner force, that will change the world from within to without. It is a personhood akin to Fichte's absolute self, that strives into the unknown without causality.

The third premise on which the Harnack principle is based is an idea of uniqueness, or as Dumont puts it 'singularity' (1994: 191). This is clear from the language which surrounds the directors; they are 'exceptional individuals' with talents beyond the norm. Meanwhile those who do not match this ideal are 'second row' or 'second-best' (Markl 1998: 22), exposing the very hierarchical conception of talent the Society maintains. The premise of singularity is also clear from their appointment processes. Having raked through possible candidates the committee will not then draw up a list, or compose a 'ranking order'. There is only one person they want, only one proposal they put forward. If this candidate declines the call the whole process will begin again from scratch. 'There is no second nominee' to fall back on. What better illustration of

13 http://www.mpg.de/39586/MPG_Introduction?clientIP=134.76.24.9&page=2

14 Cf. Chapter 4.vi.

the heroic personhood they reproduce through such conventions; the hero is non-substitutable, irreplaceable.

Finally, I arrive at the least explicit premise of the Harnack principle: that these directors should be spiritual leaders. Indeed the language of the spirit is quite common in the Society in general, and that which surrounds the directors of a decidedly biblical ilk. We already know about the 'leap of faith' that their colleagues must take when appointing them, and that these leaders will 'advance the cause of science'. Meanwhile directors themselves may refer to their 'mission' or their 'vision'. The beginnings of a department can sometimes sound a little like the founding of a charismatic cult, one director even drawing up a list of 'ten commandments' when he did so. More broadly, directors will emphasise that new appointees should exhibit a talent which is non-measurable. They scorn quantitative metrics like the so-called 'H-index' and instead look for elusive, ineffable qualities such as 'promise'.

In short a range of processes and ways of thinking about time, talent, resources and societal relationships get scooped up into the Harnack principle, which becomes the primary medium for the Society's articulation of its principal value-idea. All of these bear some relation to charisma – as I with Weber's assistance have defined it – one which takes the form of an individual. Just like the Harnack principle itself – which was essentially invented posthumously by the scientific members of the KWG – it is upon an individual that the activities of the group are hung. Having begun with the value-idea, I now broaden the discussion out into the plural: the 'set of values and ideas' which circulate the landscape of the organisation like zephyrs. All of the phenomena we will turn to next relate to the value-idea in some partial way. Yet they also go far beyond it, fanning out into a whole complex of values and ideas in which this central institutional idea is embedded.

ii) Audit and autonomy

As we saw in Chapter 2.i, one of the ways in which the MPG survived the vociferous '68 social critique was by introducing a *Fachbeirat* (external advisory board): an idiosyncratic procedure of internal audit to evaluate the work of the Institutes. In so being it would be tempting to explain away this procedure as yet one more expression of an encroaching 'audit culture' (Strathern 2000a), which, for Strathern and her contributors, threatens to engulf scholarly institutions in Europe and beyond. It is after all, the application of an accounting model (the reports submitted as part of this procedure are full of statistical illustrations which appear to fit the bill) to evaluate other domains, i.e. scientific research. The introduction and enforcement of the alternative bureaucratic authority of the *Fachbeirat* to counter the charismatic authority of the director, seems to express the symbolic violence through which auditors 'create their own reality' (2000b: 289) irrespective of context, like a virus replicating itself within the body of the host.

However this would be a mistake. For one thing the genealogy of the *Fachbeirat* should suggest otherwise. Strathern tells us that audit culture is a relatively nascent phenomenon, coming into being no earlier than the 1990s; while the *Fachbeirat* as we know entered the governing architecture of the Max Planck much earlier: in 1972. This practice often travels amidst the effluvia of a 'new managerialism' (Shore and Wright 2000: 58), yet as the directors are the heads of their own administration, there is not a manager in sight. Finally, audit culture for Strathern, is fundamentally an expression of the ever-tightening stranglehold of the state over extra-governmental institutions, as part of a 'taken-for-granted process of neoliberal government' (2000a: 3), yet we know that Article 1.2 of the Society's statutes enables the Institutes to 'pursue research freely and independently (Max Planck Society 2010: 1). Any explicit political intervention in the Max Planck Society is technically illegal. Instead the *Fachbeirat* is an autochthonous invention. As Peter Gruss himself says, 'We firmly believe that evaluation can be effective and credible only when it is in tune with the mission of a research organisation' (Max Planck Society 2010c: 4). The purpose of this section is then to explore precisely what it means to be 'in

tune' with the Society's 'mission', and how this is distinct from the genre of audit culture which pervades other research organisations.[15]

First a formal description of this convention and its characteristics will be necessary. The *Fachbeirat* is essentially the periodic review of the Institutes by peer researchers who are not members of the Society. Ostensibly, it provides the Society with a formal mechanism to contain the ever-present threat of '*Entschdeidungsmissbrauch'*: the directors' abuse of their own decision-making powers (Butenandt 1981: 505).[16] When it was conceived, it was proposed that this advisory board would be occupied,

> 'not simply by friendly neighbours, but rather critical and independent (and in that sense predominantly foreign) disciplinary colleagues. The advisory boards should thus be answerable not to their colleagues in the Institute, but rather to the president of the report committee' (Gerwin 1996: 213).[17]

Most of these reviews take place bi-annually in the manner of what the Society calls 'ex-post evaluation' (Max Planck Society 2010c: 12). The procedure runs as follows. Four board members are appointed per director, as proposed by the Institute and selected by the Vice-President. In advance of their visit, these board members will then be provided with a substantial 'Status Report' from the Institute, often running to a couple of hundred pages. This will contain a whole range of predominantly quantitative information including:

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15 What I do not explore, but an argument which is equally tenable, is that it is in fact the *Fachbeirat's resemblance* to conventional audit culture, as a formal evaluative procedure, which acts as a buffer against it. Thomas Fillitz in Strathern's volume offers the example of the crisis of the Austrian University system in 1996, which was prompted by the accusation that it had 'not undertaken enough research upon itself' (2000: 237). The system was subsequently subjected to intense – and damaging – bureaucratic scrutiny. The Max Planck Society has undergone no such crisis because it appears to evaluate itself so prodigiously.

16 This citation is taken from a volume collecting the speeches and writings of Adolf Butenandt: President of the Society from 1960 to 1972.

17 'Nicht nur freundliche Nachbarn, sondern kritische und unabhängige (darum überwiegend ausländische) Fachkollegen sitzen würden. Die Fachbeiräte sollten denn auch nicht den Kollegen im Institut, sondern dem Präsidenten zur Berichterstattung verpflichtet sein'.

personnel, budget, publications, an outline of research programmes with attendant photography, prizes, public relations etc., all published in exquisitely aesthetic A4-sized booklets (ibid: 13).[18] After processing this, the board will then conduct an in-person inspection of the same Institute lasting anything from one-and-a-half to three days. Afterwards they are invited to submit a confidential report to the President who, in light of which, may make suggestions and comments to the Institute. The latter is then permitted to respond. This response is then passed back through the president to the advisory board, and the whole thing wrapped up with some final documentation. The complexity of this to-ing and fro-ing is intended to provide the space for feedback and exchange, yet simultaneously protecting the secrecy of the board's evaluations (and thus not jeopardizing the relationships with their international peers).

In one Institute I am present for one of these in-person inspections. The event in its entirety is profoundly theatrical, so I will lean on Erving Goffman's renowned theorizing of performance to highlight its significant details (1990). This is undoubtedly what he names a 'front' performance: meaning, 'activity...during a period marked by…continuous presence before a set of observers' and which serves to 'define the situation for those who observe' (1990: 32) – although arguably in this context the observers themselves are also co-constructing such a 'definition'. Goffman articulates the mechanics of a 'front' performance through its 'setting' (of the space in which the performance takes place), 'appearance' and 'manner' (of the actors performing) (ibid: 32-35), and I shall borrow his tripartite analytical set.

Occurring shortly after I arrive, I am unprepared for this major event, and what strikes me immediately as I enter the Institute one sunny morning is the radically altered 'appearance' of the scientific staff. Long habituated to the slightly grungy style which can characterize scientific day-wear (all trainers, jeans and comedy t-shirts), the sudden apprehension of female scientists in colour-drained skirt or trouser suits, wearing noisy high-heeled shoes, and their male counterparts in smart pressed suits and shiny leather brogues, comes as

18 Incidentally these 'bi-annual reports' provide fantastic statistical resources which have facilitated my research enormously. All graphs compiled in this thesis have these reports as their empirical basis.

something of a shock. Apparently an email was sent round to the whole Institute, instructing them on how to dress, and being a neophyte, I missed the memo. I feel keenly the experience of 'social facts' as made manifest by the forms of 'resistance' which surrounds them (Durkheim 1982: 53), when in the morning a group leader in a jet-black suit strides past me clearly in a hurry, but with time to direct a pointedly menacing glare at my blazing white trainers. Their woefully inappropriate colour and form burn hot into the soles of my feet, and, embarrassed, I ensure that when the event itself begins, they are rapidly occluded as I am one of the first to take a chair.

However it is the 'setting' which characterises the *Fachbeirat* visit most clearly as a Goffmanesque 'performance'. The day before two large lorries arrive, packed with several hundred chairs and disassembled equipment, and very quickly one of the Institute's main halls is transformed into a rather professional looking theatre: replete with raised stage and draped black curtains suspended from tall scaffolding. Elsewhere small circular tables with white tablecloths start to pepper various areas around the building, some of which are loaded up with a spread of appetite-inducing canapés and baked goods. Meanwhile another interminably long corridor is wallpapered with scientific posters on either side, and after the presentations we are all ushered towards it to take part in the 'poster session'.[19]

The final element which defines the character of a 'front' performance is the 'manner' which performers (and arguably observers) adopt in its execution. It is here we that we begin to approach what the 'definition' of this theatrical situation might be. The main event which takes place in the temporary theatre of the large hall begins just after lunch. As stated, I take my seat early, and gradually the room begins to fill up: most employees choosing to occupy the back rows rather than those directly beneath the stage. There is clearly a logic to this, as by the time most people are seated, some twenty or so men in suits – the sixteen members of the *Fachbeirat* plus the Institute's directors and those group leaders presenting – stride through self-consciously down the central aisle to the

19 This is a ritual in which each poster is flanked by the scientist who produced it, on hand to explain the methodologies and results of their scientific work.

front rows of chairs. However, this self-consciousness (bordering on awkwardness) speaks volumes, as do the loud rumbles of collective laughter which sporadically erupt from this group as they chat before the formal event begins. When it does, one of these directors stands up to introduce the work of his department. However it is not in a manner of obsequiousness or nervousness prompted by the presence of the board that he does so, but rather one of merriment and self-deprecation. The group leaders are invited to explain 'what on *earth* they are doing and why they are *here*!': hardly the most aggrandizing of introductions.

Goffman notes the potential for a divergence between 'appearance' and 'manner' (1990: 35) and this is certainly the case here. While the smart pressed suits, white tablecloths, and stage equipment all say 'we take your visit "*very* seriously"' as I am elsewhere told, the easy manner taken by the directors and board members says, 'But at the end of the day we're all scientists, and so share the same set of values and passions. These suits are just a ruse'. There would be a very different atmosphere were the *Fachbeirat* all representatives of a the managerial class. The jokes which are clearly being bandied about also do what Mary Douglas says they do when exchanged on ritual occasions, which is to 'denigrate' the 'dominant values' of the ritual (1975: 102). But in denigrating, a joke also 'celebrates something else…the irrelevance of one obvious level and the relevance of a submerged and unappreciated one' (ibid: 104). The obvious level is of a formal evaluation procedure like any other: one based on bureaucratic principles, subordinating the qualitative to the quantitative, and making organisational decisions therefrom. Meanwhile the submerged level is human-oriented: one which respects the directors' autonomy and personal authority, their own particularities and futurities, and their ability to determine themselves and their communities effectively. This divergence between appearance and manner suggests that while the *Fachbeirat* pays lip service to conventional audit culture, it still refrains from substituting the Society's charismatic authority for a bureaucratic alternative.

This is most clear in what subsequent effects the report submitted by the advisory board may have. While conventional audit culture can have very direct

consequences in terms of the number of posts and the distribution of resources, the material consequences of the *Fachbeirat* are largely ill-defined. As one director says, if the advisory board decides that he has 'failed' it is simply, 'awkward'. It is critical that there remains a formal separation between 'advice and decision-making' (Butenandt 1981: 505), which means that despite a bad review, 'no-body is going to prescribe anything to them'.[20] It is more likely that if a director applies to the President for extra funds to purchase some expensive piece of equipment – which they may need to follow a new experimental programme – then the request will be very politely declined. If the Institute receives a bad review at the more extensive evaluation which takes place every six years, the President does possess the statutory capacity to reduce their 'base-level funding' by twenty-five per cent. As one member of presidential board says, 'that's quite a lot', however it is only 'applied very rarely'.

The most likely consequence of the advisory board's report is thus one which should not surprise us at this point, as it resembles other charismatic societies: a rise or fall in status among the other directors. Although the report itself always remains private, directors maintain that 'you know if someone doesn't get a good result. You hear about it on the grapevine'. One extends a hunting analogy to explain what might happen. 'We're back to the hunter society. Good hunters are accepted. Bad hunters are not killed, not at all. But the good hunters look at the bad hunter and think he is a bad hunter. And this will make him work harder on his hunting skills'. The intention is therefore that a director's relative performance in the *Fachbeirat* should be introjected as part of a self-regulating and self-improving autonomy, rather than resulting in deleterious material consequences which they then have to subsequently cope with.

The *Fachbeirat* and Strathern's audit culture, do however come from the same place historically: the enthusiastic efforts by European nation-states in the eighteenth-century and after to tabulate their populations. As Ian Hacking tells us, the nineteenth-century was inaugurated by an 'avalanche of printed numbers' (1990: 3) among the bureaucracies of Europe. While all of these nations

20 'Die Trennung von Beratung und Entscheidung'.

maximised the recent advances of the printing press and numerical science to their own ends, it was the *Prussian* statistical bureau which outpaced them all. It energetically 'published and published and published' (ibid: 32), prompting Goethe to make caustic reference to 'our statistically-minded times' (ibid: 16). Under the leadership of the bureaucratically-inclined Frederick the Great, Prussia alone 'brought to full consciousness the idea that the nation-state is essentially characterised by its statistics, and therefore demands a statistical office in order to define itself and its power' (ibid: 18).[21]

Despite emerging simultaneously, there has always been a crucial difference between the role played by those national bureaucracies in Britain and France (which find their form in contemporary audit culture), and their Prussian counterparts (which lead to the subtly different protocols of the *Fachbeirat*). This distinction, which is the essence of Hacking's argument, lies in the relation between the amassing of statistics and subsequent decision-making. While in Western Europe the rise of positivism and the formation of statistical 'laws' to predict human behaviour, seemed to be logical consequence of such data-collection, this proposition was never accepted by the 'holist' East (ibid: 36). German thinkers resisted the idea that statistics could predict (and therefore should be used to govern) behaviour. For them society was not made up of separate Lockean actors making rational choices, instead society was *prior* to such actors, and thus their subsequent behaviour was irreducibly stochastic. Society could only be influenced at the level of the whole. At its heart lay a philosophical argument, reaching its apotheosis in the opposing definitions of social science offered by France's Émile Durkheim and Germany's Max Weber.

In short, the place of the *Fachbeirat* within the Max Planck Society, as a technology of evaluation which need not necessarily lead to action, communicates something powerful about its values and ideas. Strathern's audit

21 This kind of numerical ontology, a relationship between being counted and simply, *being*, still lives on, in the form of these bi-annual reports which serve a social function beyond their submission to the *Fachbeirat*. When I meet a director for the first time, they might bring along a report to give to me, or if I stay for a while, ask repeatedly if I have seen the reports until I respond in the affirmative. There is a keenness to demonstrate an existence-by-numbers.

culture is a clear expression of bureaucratic authority: the neoliberal state's colonization of national institutions by subsuming other forms of social ordering under its own bureaucratic mode, a mode which is, as Michael Herzfeld says, fundamentally 'inhuman' (1992: 67). Bureaucracy's 'indifference' to the human plight and its capacity for infinite variation arises from a culturally obliterating loyalty to its own logic, that of 'rationality and efficiency' (ibid), rather than 'a world managed by identifiable spiritual forces' (ibid). By contrast, Max Planck audit culture turns such characteristics on their head. Rather than acquiescing to the stranglehold of the state, the *Fachbeirat* is run by the Society itself, exhibiting a fidelity to the principle of political autonomy (variously described by its leaders using allotropes of awe, as 'marvellous', 'wonderful', or 'spectacular'). Rather than the domination of inhuman rationality, it is particular human beings which remain the source of organisational generativity, in the formal separation of advice and decision-making. Rather than negating spiritual forces, the directors must therefore 'rely on their own intuition' to progress scientifically. This negative definition leads us to a positive conclusion: the resilience of the value placed on the human at the expense of the apparently rational and efficient. It is for this reason that members and scholars of the Max Planck Society alike see more continuity than change in the governance of the organisation after 1972 (Butenandt 1981: 494-511; Gerwin 1996: 223). Despite now auditing itself on a near-constant basis, the Society has 'remained true to the principle of its predecessor' (Butenandt 1981: 494), and retains the Prussian philosophical inheritance which forged it.

iii) Schloss Ringberg

No discussion of the Max Planck Society's constellation of values and ideas could pass by without some mention of its very own castle, *Schloss Ringberg* (Ringberg Castle, or simply Ringberg). The combination of the castle's powerful regional and historical materiality, with the current practices and discourses which surround it, tells us not only about the Society's vision of itself, but also the implicit contradictions therein. As a castle – albeit a twentieth-century one – Ringberg transports the visitor immediately into Germany's pre-

modern past: a world of absolutism (Vierhaus 1988), noble families, and hereditary status. Yet despite having taken the decision to acquire the castle in 1973, the Society always seeks to sunder any connection to this older order. Similarly one of the main functions of the building is to host departmental 'retreats' (*Klausur*), with all the associations of monastic privacy and seclusion that entails. On the other hand, the Society simultaneously cultivates an image of openness and transparency. Ringberg shows us the cultural continuities which transcend their overt negation, the rigorous policing of borders which makes such openness possible.

The castle is situated deep in the Bavarian Alps, amidst Benedictine monasteries and dozens of former aristocratic strongholds, and set high into the hillside of the mountains overlooking the picturesque *Tegernsee* (Lake Tagern). It essentially provides a remote venue where directors and their guests can work, rest and play, and is available to every department bi-annually for their three-to-four day *Klausur*: a mixture of scientific presentations and leisure activities.[22] It is also more broadly intended as a presentational venue for directors to bring their international colleagues, for conferences, workshops and symposiums. These can last anything between three days to a maximum of one week. As a consequence *Ringberg* really is put to continual use in all seasons, every one if its thirty-five guest rooms being booked up all year round, and two years in advance. By way of illustration: in 2007, the castle was host to no less than seventy-five separate events, attended by nearly three thousand visitors in total (Gruss 2008: 7).

I orchestrate a visit to the castle, one summer day in 2012, and discover it is in fact rather difficult to find, the gravel path which marks its entrance easily missed. The latter, very uncharacteristically, projects no Max-Planck insignia whatsoever, only a small and slightly worn-out sign reading *'Schloss Ringberg'* in gothic script. As I begin the ascent of the steep hill-hugging road, under a canopy of trees and around precipitous hairpin bends, the fact that the castle is difficult to find begins to seem increasingly intentional. Intermittently, forms of

22 Cf. Chapter 6.i.

vaguely threatening signage come into view. *'Keine Besucher'* (no visitors) and *'Keine Besichtigung'* (no visiting) approach like apotropaisms, serving to ward off the threat of casual or curious sightseers. After a ten-minute uphill drive, I arrive at the grey-brick castle front. It looms tall amidst the forest, with a triangular hat-like roof, small windows, and a large arched wooden door fitted with an oversized brass knocker. Still, the familiar profile of Minerva is nowhere to be seen. Only a small and simple brass plaque proclaims the building's function on the door, *'Tagungsstätte Schloss Ringberg: Keine Besichtigungsmöglichkeit; Zutritt nur für Befugte'* (Ringberg castle conference centre: no visiting; admission for authorized persons only'). In a substantially smaller font underneath, the institution finally makes itself known: 'Max-Planck-Gesellschaft zur Förderung für Wissenschaften e.V' (Max Planck Society for the advancement of science, association) it tells me quietly.

Arranging a visit to *Ringberg* is no straightforward matter. It is open to the general public for just seven hours every two years, meaning I am obliged to negotiate an exceptional private viewing. After sending my request, I receive a long reply from the caretaker explaining how important it is for the Society that no 'external visitors' are admitted. As she says, 'When we have our door closed, our guests know that they can work undisturbed. This is the way we manage to create an open, productive environment, in which our guests can get more done than they would if they were meeting somewhere else'.[23] Scrolling through a few paragraphs of such statements, which are a little like the epistolary equivalent of those signs announcing *'Keine Besucher'*, I steel myself to accept the inevitable *nein*. It never comes. She is willing to make a brief and very rare exception for me: perhaps due to my previous affiliations with the Society, perhaps out of a cultural respect for research and its practitioners. In any case, while ushering me through its doors for two tantalizing hours, she leaves no room for doubt as to the social value ascribed to the privacy and seclusion of this holiday hideaway.

23 'Wenn wir unser Tor schließen wissen unsere Gäste, das sie ungestört arbeiten können. Somit schaffen wir ein offene, produktive Umgebung in der unsere Gäste mehr erreichen als wenn sie an einem anderen Ort tagen würden'. I am struck by the oppositions in this statement. The emphasis is on having an 'open and productive environment', yet this is only enabled when the door is 'closed': all those not insiders resolutely denied access.

Schloss Ringberg took shape as a building project in 1912, dreamt up by a young Duke Luitpold (one of the Bavarian patrician 'Herzog' family) and his 'personal artist' Friedrich Attenhuber (Himen 2008: 45).[24] Having been originally conceived as an Italianate villa set in open countryside, after returning from his military service in the First World War, Luitpold's priority became increasingly to render the structure more 'fortress'-like. In the 1920s, but all the more so in the 1950s, he became obsessed with augmenting the 'fortifications' encircling the original complex (ibid: 55). Tall grey stone towers with their sharpened turrets, and newly-crenellated castle walls, sealed the transformation from a Mediterranean summer house to a '"labyrinth of stone", shut off from the outside world' (Rühle 2008: 151). As one scientific participant puts it with gusto, it now looks, 'like a really defendable structure!'

The motives for Luitpold's change of heart can be speculatively interpreted as an architectonic response to Germany's traumatic twentieth-century, particularly for its ancient ruling class. As Helga Himen – the building's historian – puts it,

> 'Luitpold was working towards a private "retreat" of his own on the Ringberg, a refuge in which he might lead the life he envisaged, where he could withdraw from a world that had radically changed. There he would be fleeing an era marred by profound existential changes and uncertainties, a world in which the political importance of the nobility had vanished with the end of the monarchy' (Himen 2008: 55).

The Duke was still working on his 'retreat' when he died in 1973 (and it then passed into Society hands) and even after six decades of construction, left the building unfinished.

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24 For an immensely thorough account of the building, its contents, and the historical relationship between these two men see Himen (2008).

The Duke's longing for privacy and seclusion however, persists, wilfully adopted by Society employees, but also with perhaps less intention, by the affordances of the setting he created. An intimacy and a separateness seems to unfurl itself over *Ringberg,* flanked as it is on all sides by dense forest, which rustles gently with a sibilant swish in the mountain breeze. The air around on this warm summer day feels strikingly close, thick with the sweet scent of wild flowers and the delicious pine must of the forest floor. Indeed, the castle feels so much a part of the forest around it that at certain points the latter appears to be reclaiming its territory. On the far side of the castle where the walls touch the lower slope of the hill, there is a large roofless space, enclosed only by a rather decrepit battlement, and overgrown with flora of all kinds. Beside it, ivy creeps up the figures of the towers, and bushes and leaves make self-confident forays into what were once pristine walkways and outposts. The whole atmosphere of the grounds feels as the caretaker desires: 'undisturbed' by the clamour and chaos of the mundane world below. It is like a glorious secret concealed in consort with the spirits of the forest. I half-expect to hear sleeping beauty snoring gently from the turret.

Inside, the castle plays on all the aesthetics of an extremely lavish hunting lodge.[25] Every surface is saturated with colour.[26] Vibrant orange varnished wooden floors meet the deep green tiles of old heating stoves, beside which pulse the rich reds of upholstered chairs. Every item of furniture, all made bespoke by local craftsmen, is generously proportioned: long wide sofas, oversized lamp-shades, and chunky armoires populate the building's capacious high-ceilinged rooms. Meanwhile on almost every wall of the interior are suspended the paintings and tapestries of Friedrich Attenhuber, single-handedly responsible for the castle's entire artistic vision. These often depict hunting scenes: some portraits of himself and the Duke in full costume, and others mythical imagery of dogs and hounds amidst the undergrowth. Along with carved wooden deer-heads, there is also an authentic array of antlers throughout, mounted on a plaque sometimes inscribed with the day of their former owner's death. *Ringberg* is also

25 Another of the original inspirations for the early version of the building was the '*Ansitz'* hunter's hut vernacular common to the region.

26 See Figure 3.

'lodge'-like in its strong orientation towards conviviality and leisure, just as the Duke had wished. A large chess set stands between two arm-chairs upstairs, an equipped fitness studio occupies one of the turrets, there is even a 'garden room' downstairs where one can sign off any number of the beer bottles available, overlooking a long outdoor swimming pool which can be used in summer.[27] Indeed it takes little to imagine the 'roaring fire' that is purportedly present all through the winter (Fred. F. Lange, cited in Rühle 2008: 155).

The setting both inside and out then, conveys so much of the sensual and sybaritic that it is not surprising visitors come to think of it as 'our scientific home' (Rühle 2008: 155). It is rather like the Alpine retreat of a wealthy aristocratic family, to which they would bring their guests in order both to impress them, as well as to deepen the relationship.[28] It even has its own (remarkably sociable) house cat! The family is of course the Society's 289 directors, while all those who stay with them, their 'guests'.

The castle strikes a particularly vivid contrast with the Institute's 'Guest Houses', the white modern blocky apartment buildings which accommodate scientists new to, or visiting the Institutes.[29] While the latter are mediated by a superfluity of 'texts' throughout, there is little to no signage in the interior of *Ringberg*, only the requisite fire-safety notices and the idiosyncratic naming of rooms.[30] Visitors do not need to be guided by an unseen impersonal hand through the space, as presumably this role at *Ringberg* is performed by human beings: the building's caretakers, or their Max Planck colleagues already familiar with the castle. Likewise, the interior furnishing of the Guest Houses (all neutral whites, wood, and steel) is not only mediated but *produced* impersonally, through alienated modes of production, in all probability by extra-European labour. Set this against Attenhuber's single-authored paintings and tapestries, or even the giant-sized furniture produced by hand by craftsmen from the region. So

27 See Figures 1 and 2.

28 Indeed, extending this parallel even further, apparently one of the turrets contains piles upon piles of the English upper class magazine 'Country Life', which the Duke had been collecting since 1935.

29 Described in Chapter 6.i.

30 These are for example: *'Hexenzimmer'* (the witches room, which the Duke had intended as a gaming room) and the *'Herzogliches Arbeitszimmer'* (the Duke's writing room).

inextricably tied is the material culture of *Ringberg* to the lives of two men, and to the castle and its environs, that these objects are as Annette Weiner would say, utterly '*inalienable*' (1992). They cannot be detached from their original owners. Finally it should be noted that the 'non-place' of the Guest House is also a non-time (Augé 1995). These lodgings attempt to exist as far as is possible outside of any identifiable historical epoch. Meanwhile *Ringberg* is so indelibly stained with twentieth-century aesthetics (as well as numerous retrograde inspirations), and sings with such pathos the swan song of a dying social order, that its place within time is unquestionable. Even before it was acquired by the Society, *Schloss Ringberg* was listed as a 'historic monument' by the Bavarian State (Himen 2008: 10).

On this point, directors have often been highly ambivalent about *Ringberg*. In contrast to foreign guests, for whom the whole setting is thrillingly exotic, German Directors in particular can be remarkably sheepish about its symbolic content and the messages it conveys. The current president himself says, 'Personally I have mixed feelings about the building. To today's tastes, the medieval fortress look is overdone, and the same holds true of many aspects of the interiors and paintings' (2008: 7). Another director articulates what the President could be hinting at, in more blatant and self-deprecating terms: 'Max Planck heads were known to behave in the outside world as if they were “monarchs of science” - and now to add insult to injury, a castle?' (Rühle 2008: 151). Even when the acquisition was being discussed in the 1960s, 'enthusiasm for the idea was not held unanimously within the Max Planck Society' (Meitinger 2008: 146). This remained true afterwards, as the castle's small information book says prosaically, 'At first, the Max-Planck-Gesellschaft was not too enthusiastic in accepting the inheritance' (Deutschmann and Globig 1994: 58). The booklet then offers some rationalist financial explanation, but the recurrent lack of enthusiasm for this exquisitely unusual conference centre goes deeper than that.

To understand this, the idea of 'inheritance' remains a useful one to apply. However it is not just the physical inheritance of the building – requiring a substantial financial outlay and running costs – which some directors are reluctant to accept. Rather it is the *cultural* inheritance of an old order of

hereditary privilege, one that Luitpold was trying to so tenaciously cling on to, and that after 1945 the Society has sought with equal tenacity to distance itself from, that endows these leaders with 'mixed feelings'. Unlike the UK, where the symbolic value of the monarchy becomes ever more entrenched, for Germany the changes wrought by the first and second world wars asserted a radical break with this tradition, substituting it for an equally powerful heroism earned by achievement (which already had its own precedents). This is expressed most obviously by the renaming of the '*Kaiser-Wilhelm*-Gesellschaft', as the '*Max-Planck*-Gesellschaft' in 1948.

In brief, *Schloss Ringberg* ties together a number of broader cultural strands to which the Max Planck Society is indubitably bound. The most obvious of these is the old hereditary order which preceded the break of modernism and its meritocratic mythology. It is not coincidental that, as Manfred Rühle says ironically, that directors are likened to 'monarchs of science'. It is this very same political ontology that has accorded them their contemporary authority – albeit on very different terms. In the early nineteenth-century, the Idealists carved out a social space for German intellectuals which had formerly been occupied by the nobility of the Holy Roman Empire. Ringberg also exhibits a profound separation between inside and out. It is very important for them that there are '*keine Besucher*', only directors and their 'guests', something which tells us far more about the very real social limits through which the MPG governs itself, than a visit to one of its Institutes ever could. Lastly, it seems pertinent to mention the artist Attenhuber. Ringberg is a classic *Gesamtkunstwerk*: one individual's total vision for how a building should look and feel. It is impossible not to see the echoes in the personhoods of directors, who are encouraged to realise their own visions for science.[31] Ringberg is like a palimpsest of the cultural history which produced them.

31 Cf. Chapter 4.iv and v.

iv) Visual representations

Having used Ringberg as a diving board into Germany's past to flag up some of the precedents for the Max Planck's values and ideas, it is time to return to the present and explore more of the messages that the Society is sending about itself. To do this, I explore two symbolic sites: one spatially concentrated, the Max Planck Society headquarters in Münich; while the other spatially distributed, being imprinted on its documents and other material forms, the Max Planck Society 'logo' featuring the Roman Goddess 'Minerva'. Neither possess Ringberg's contradictions, having been self-consciously designed by the Society itself in recent years to articulate a 'brand identity'. In reflecting on the particular imagery they invoke, we then get a better sense of what this brand is.

The bureaucratic beating heart of the MPG lies in the centre of the Bavarian capital, beside the *Englischer Garten,* and only a couple of hours drive away from *Ringberg*. Unlike the exteriors and interiors of other Institutes, whose often colourful heterogeneity speaks to the diversity of disciplines they house, those of the Max Planck Society Headquarters are focused purely on administering the organisation itself, and so remain focused upon the latter's own basic identifications. Much like *Ringberg*, the architecture of the building and its environs again plays on the aesthetics of fortification (making the latter appear rather less coincidental). From the outside, its four-storeyed streamlined glass front, with row upon row of horizontally rectangular windows, is again partially hidden from view by tall lush green trees. Not only that, but there is a long thin body of water separating it from the pavement which runs alongside, one which invokes visually (if not functionally), the moats along medieval castle walls to ward off potential invaders.[32] The drawbridge, so-to-speak, which crosses it, leads to a cylindrical revolving door flanked by two tall grey metal pillars.

Before one reaches the doors however, there is a very obvious threshold which must be crossed. This is marked on the left side by the profile of Minerva (who will be treated later), hewn somewhat roughly into a flattened stone

32 See Figure 4.

sculpture taller than human height. Simultaneously on the right-hand side is a flat stone sculpture of equal height, cut into the shape of a negative space into which this profile would exactly fit.[33] This dyad embodies German holism in perfect form; the individual and the society which made them are cut from the same block of stone. The crack in the stone out of which the profile of the self emerges, is that moment of self-consciousness about which the Idealists was so enthused. Rather like the sinful bite nibbled out of the logo for Apple Computers, it signals the ontological transformation instigated by knowledge. One has to pass through this enlightenment to enter the Max Planck headquarters.

There is also another threshold which is crossed more inconspicuously, if one gazes down at the ground when doing so. On the stone paving underfoot is an inscription which reads in two lines of ancient Greek,

Ποθου πληρης και στοργης
αιεν αριστευειν και υπειροχον εμμεναι αλλων

which can be translated as the following,

Full of desire and love,
always to be the best and distinguished above the sum of all others.

The Society clearly envisions itself in some sense as an ideal Platonic Republic, its philosopher ruler and guardian warrior class motivated only by 'desire and love' rather than temporal power and wealth. It also seeks to be, as they sometimes say themselves, 'the best'. According to Annette Vogt, when the KWG was formed in 1911 it did so with two founding 'myths': one of these being that, 'we are, by definition, excellent' (pers. comm.).[34] The KWG was founded as a solution to the structural failings of the German university system, and to this day, the asymmetry in status between the two remains. The Max

33 See Figure 5.

34 The other 'myth' was that the organisation would depend entirely on private finance as opposed to state-sponsorship.

Planck Society is still ideally intended to be 'the best and distinguished above the sum of all other (research organisations)'. The only difference now is that it not only competes with its 'others' within Germany, but also with the cream of the American Ivy League.[35]

Immediately on entering the building, the visitor is projected into a large central atrium reaching up to the ceiling, with four floors of offices visible from below. Adjacent to walls and nestled in corners throughout this atrium, rather like clusters of mushrooms sprouting from moist patches of the forest floor, are groups of three or four disembodied heads on sticks.[36] I phrase it like that to give the reader a sense of their strangeness: for the effect is a peculiar one. Largely without necks, let alone bodies, life-size dark bronze busts of former Max Planck Nobel Prize-winners sit atop light grey marble plinths, marked only by a simple inscription of their full names in capital letters. These are almost all men, excluding one woman who is positioned prominently near the front doors, and the only one to be endowed with collar-bones.[37] They are also identical in style to those I come across in other Institutes, often of Max Planck, but also Einstein, as well as the respective Institute's former directors, and convey a sculptural articulation of the 'heroic headship' which will be outlined in the following chapter. On the fourth floor, lining the corridors leading to the offices of the presidential board, there are similar carvings of all the Society's presidents to date. In addition to this, however, suspended from the walls are large colourful and expressive oil paintings of each one, pictured from the waist up while comfortably seated. Although the Nobel Laureates are represented as pure brain, as leaders and managers of the whole organisation, presidents as simultaneous 'men of action' are apparently permitted a tincture of brawn.

Finally we return to Minerva, who appears again in the lobby in two-dimensional form, as a several metres squared copper-coloured hologram on a

35 'Max-Planck-Gesellschaft auf Platz drei im Nature Publishing Ranking. Große Dominanz der USA, nur zwei Forschungseinrichtungen aus Deutschland platziert', [Max Planck Society comes third in Nature publishing ranking, largely dominated by the USA, with only two research institutes ranked above Germany] 25th March 2011, http://www.mpg.de/1261613/Nature-Ranking.

36 See Figures 6 and 7.

37 This is Christiane Nüsslein Volhard, the extraordinarily successful developmental biologist.

black background, gazing out over several of these Nobel prize-winning heads in a military helmet.[38] As the most ubiquitous and iconic form of imagery within the organisation, Minerva deserves some reflection. Her left-facing profile is the contemporary face of a recently 'corporatized' Max Planck Society (Schrecker 2010), in which the strict control over image which has become the *sine qua non* of the twenty-first century research organisation: decorating everything from t-shirts, baseball caps, coffee mugs and pens, to formal documentation and public presentations.[39] Yet her connection to the MPG is a long-standing one, having been selected in 1911 as the original heraldic symbol of the Kaiser-Wilhelm Society. Eight years after the king's abdication in 1918, it was Minerva the directors chose to adorn their ceremonial bronze badges (*Mitgleiderabzeichens)* to replace his image (Vom Brocke 1990: 278). In contrast to her present form, the original Minerva was full-bodied: her right-facing stance, adorned with characteristic shield, spear, and military helmet, set in an oval frame. It was only in 1939 that the image of a simple severed head (much like that of Harnack on the original Harnack Medal (Vom Brocke 1990: 279)) first appeared, and elected as the single image to represent the whole organisation.[40][41] Minerva's mid-century incarnation was thus demilitarized and disembodied.

There are several points one can make about the symbolic connotations of the Minerva logo: the first being that it is self-evidently a classical deity being reproduced here. As the Roman goddess of wisdom and artisanship, the mythic heritage being drawn here is with ancient Rome (and by implication ancient Greece), and the birth of a tradition of scholarship which they see themselves as 'advancing'. It is interesting in this sense that the Society did not go down the route of Humboldt University and feature its founder Adolf von Harnack, in its logo, or even Max Planck himself. The Society is drawing a much longer lineage here than that of the recent past, allying itself to myth rather than history. Featuring Harnack or Max Planck, would somehow be too profane, too this-

38 See Figure 7.

39 See Figure 8.

40 The Harnack Medal has been awarded since 1924, to one scientist every few years for their 'services to the Society' – its recipients often being standing or former presidents although not exclusively.

41 The current image of Minerva was first published in the Kaiser-Wilhelm Society Annual Report in 1939, and since then has had minor variations in its design.

worldly. Minerva as mythological is ungraspable. She is also, clearly, female, and in that pre-feminist sense mother nature herself, the object of male desire, or 'curiosity': the defining characteristic of the scientist's humanity.[42]

The second point to make is that she is not simply a deity, but an *anthropomorphic* deity. This contrasts the Max Planck logo starkly with its counterparts in the Anglo-Saxon world – the logos of British and American universities – where the sacred is commonly presenced through the imagery of light, lions and books. On the other hand, the representations of human forms are similarly present on the logos of other German universities: such as the Humboldt, Heidelberg, Freiburg and Ludwig Maximilian. There is a profound human specificity to the God-like in the imagery of Germany's elite intellectual landscape, which is different to other countries' abstractions. This human centrality is part of the Max Planck's defining ethos. As one presidential board member puts it, the ambition of the MPG is to put 'people first, people second, and people third'.

Finally, it is significant that Minerva is encased in a circle. It conveys something which has appeared already at *Schloss Ringberg* and the administrative headquarters: a clearly-defined border between inside and out, a cosmic break, a rupture. Interestingly, America's Massachusetts Institute of Technology, originally conceived in the mid-nineteenth-century along the German research university model, recently expunged its similar circular logo. The complaint with the original was that, 'The two white men exist in a vague historical era held in isolation from the outside world by the rings drawn around them. They are literally sealed off from the society that they might influence' (MIT 2013). So for the public relations department of MIT these rings signify a border between scientific knowledge and its application. This is certainly a plausible reading, because none of Germany's technical universities or applied research organisations employ the same circular frame as part of their branding. Yet it also speaks to the imagery of the German Idealists, for whom as I have

42 As the German Ambassador to the UK, Georg Boomgaarden, said at a recent UCL - Max Planck Society conference, 'Science is also…fun, because curiosity is part of human being. It is *in* us to do science' (2012).

stated, it was a primary metaphor.[43] A circle with a humanoid face inside it conveys the totality of the self: the ability of an individual to encompass a whole community, a whole society.

The values and ideas which inhere in the Max Planck Society's brand image are in short, a great transhistorical mix. Ancient Greece and Rome are a frequent presence in the Society's utopian ambitions: the purity of an ideal Platonic Republic, the purity of knowledge (whose detachment from application – at the conceptual level at least – they appear quite comfortable with). The medieval is also there. The moat and the drawbridge which mediate entrance to the administrative headquarters communicate all the associations of castles and fortifications that they shoo away at Ringberg. The German enlightenment is there too, the progress driven by knowledge about the world. Meanwhile Idealist visions of self and society are of course a constant reference point. There is also excellence, prestige, and the driving creative force of individuals. The rest of the thesis is devoted to exploring how some of these values and ideas have their anthropological consequences and contradictions, but it is important to examine each one like a precious stone, before scattering them to the ground.

v) Excitement

If the Harnack principle is the formal discursive expression of how the Society is 'supposed to work', then its informal expression is the principle of '*Begeisterung'* or 'excitement'. It is the Society's 'main philosophy'. As opposed to the goals of education or application (undertaken by German universities and other research organisations), excitement is claimed as the goal of the MPG, a state of being to which Society researchers should strive, which will then naturally lead to the production of good work. The spirited, people-oriented and – quite frankly – libidinous character of such a goal also means conveniently, that it is something all scientists can apparently participate in, from the director

43 Cf. Chapter 1.iv.

downwards, and even the lay public whom the Society 'serves'. Indeed one director sees this as the primary way to maintain the latter's sympathy.

> 'The only way to communicate basic science is excitement. I'm ready to pay my taxes for this, because of this excitement. The only way to motivate exploration beyond the known is excitement. People went into space for excitement, not for the space war...People landed on the moon, everybody was excited. This was a huge collective excitement, people bought TVs just to watch this...People are always happy when I speak if I got them excited'.

Meanwhile another director explains how a collective outbreak of organic *'Begeisterung'* came to shape the research direction and social structure into which his department grew.

> 'When I started out, I thought that I would establish independent sub-groups which would work on different questions. I selected one question for myself which I was expecting to work on with my own sub-group. And then what happened is, my sub-group became bigger and bigger and also more attractive, because I think it's sort of my '*Begeisterung*', my excitement about what I was doing, I could convey to many of the others. And more and more, it was sort of pulling in from all around. And I later on diagnosed that this is what scientific leadership is about, now to tell people to do such and such, but to convey the excitement so that people are drawn into a scientific question. I watched this happen…(Despite beginning with) very independent subgroups which each work on their own field, we have arrived at a structure where the groups all concern themselves with very similar questions… People sort of move in-between and

there are no fences and walls between the groups. We sit together and talk together'.

Finally in a slightly different context, at a recent joint conference between University College London and the Max Planck Society to mark their collaboration, the same kinds of Idealist spiritualist imagery are manifestly present.[44] Taking place in London just before the Olympics, one Max Planck director employs an Olympic metaphor in his impassioned speech on behalf of the Society, 'Right now, the Olympic flame is being lit around the country. Here we can light a little flame of our own, the flame of excitement and inspiration for the research of tomorrow'.

By elevating excitement to such a key position in the Society's intra-mural and extra-mural discourse, directors are animating a dominant German cultural paradigm which places its ultimate value on *'Geist'* (mind, spirit or soul). As Dominic Boyer argues, *Geist* came to prominence in the nineteenth-century as one of the 'key tropes of intellectual selfhood' among the educated classes (*Gebildeten*) of the German Confederation (2005: 55), having been eulogized by Fichte (1988), and most famously, Hegel (1977). Borrowed directly from the religious discourses of eighteenth-century Lutheran and Pietistic Protestantism, its central meaning was to express 'the inner genius and creative capacity of the enlightened individual': one of the key visions of German Idealism/Romanticism (2005: 55). This then had several consequences. Inner genius is set off in contradistinction to an outer material world – of the body, but also temporal wealth and power. Fichte, in particular (much like the Society directors) contrasts those who animate a *Geist* to others who do not, more closely resembling a spiritless 'business machine' (ibid: 56). As such an acerbic contrast hints, this dualism between inner and outer is an asymmetrical one. Fichte is not simply drawing a contrast but making a moral statement. *Geist*, with its religious connotations, marks the presence of the divine, and thus its appearance elevates the individual who releases it in their worldly doings (thus in the nineteenth-century it becomes a means for the *Gebildeten* to legitimate their own class

44 Cruciform Lecture Theatre 1, University College London, 27th June 2012.

status). *Geist* is also a one way street, always actualising itself, 'from within to without' (ibid): beginning as a state of being and ending in some form of material impact. In the MPG it is not to do exciting science that is the primary end (although the implication is clearly there) but the achievement of excitement itself.

Nevertheless although *Geist* provides the precedent, *Begeisterung* is a slightly mutant offspring. Dumont's ideology is not exempt from processes of historical change (Kapferer 2010). *Begeisterung* maintains a spiritualist dimension, though it is not simply spirit, but rather spirit speeded up. *Begeisterung* is *Geist* on amphetamines: *Geist* for a century in which the Max Planck Society has already multiplied its population by over sixty per-cent, *Geist* for an organisation whose output is legendary. It is not by accident that *Begeisterung* has reproductive overtones, synonymous not only with 'enthusiasm' but also 'ardour', 'passion' and 'ecstasy', as thereby it invites ideas of fecundity, of growth.[45] While *Geist* is 'inner genius' gazing in wonder at its own navel, *Begeisterung* is 'inner genius' translated into an avalanche of publications quantifiable in annual reports.

Part of Boyer's argument is that tropes such as *'Geist'* are used by actors to stake certain ontological claims, about the nature of what it means to be a self and to relate to others through that self. Tropes such as *Geist* (and excitement) in this sense, perform, as part of the political negotiation of social life. As he says, 'Tropes accomplish…the intersubjective processes of meaning formation through which social actors stake their semiotic-epistemic activity in dialogue with others, who may variously construe the intentions and significance of the tropes in question' (ibid: 38). The 'play of tropes' thus mirrors the alliances and conflicts which assemble and disassemble in the unfolding of social life (ibid:

45 Imagery of fecundity can also be used by actors to produce or maintain a pre-eminent social status. This is clear from all of the political rhetoric in Britain about economic 'growth', but also manifests itself further afield. Ingrid Hoëm and Niko Besnier whom she cites, both record instances in Polynesia, of imagery of natural reproduction being used to legitimate standing authority. The logic follows that if natural abundance results from the consequences of an action, then 'that action bears the sign of being blessed' (2009: 263).

39). In this vein it is worthwhile asking what excitement 'accomplishes' for the Max Planck Society.

Here some remarks of David Graeber's in his essays on hierarchy, are illuminating. He argues that hierarchy often attempts to disguise itself by 'positing some higher sphere, of economic values, or idealist abstractions' (2007: 101). These abstractions always contain 'images of equality' which efface the social differentiation hierarchy produces (ibid: 283). He adds that 'the more hierarchical the society, the more this tends to happen' (ibid: 101). Excitement does all of these things. It is a 'higher sphere' not only about human beings, it is implied, but about the mysteries of nature itself, which spontaneously makes its researchers 'excited'. Much like the religious fundament of Indian hierarchy, excitement is fitted perfectly to the function the Max Planck order is intended to serve: the production of scientific research. Excitement is in this sense also a perfect 'image of equality'. Although I do not hear it suggested that the technicians should get excited, and never hear them say so, this trope traverses all scientific strata. Directors and senior scientists are most likely to express themselves using the term and its cognates, but junior scientists might also draw on such terms to articulate their relation to their work, particularly when they are engaged in something non-prescriptive, such as looking at materials under the microscope. Even student workers can access such excitement osmotically. It is rather like the air which all Max Planck scientists get their chance to breathe. Lastly as Graeber says, the more hierarchical a society is, the more such abstractions appear. Excitement is everywhere, which can be read as a statement on the robustness of the Max Planck hierarchy. This is partly an effort by scientific members, particularly the presidential board, to disseminate it as part of how the Society is 'supposed to work'. However, excitement is also wilfully taken up by scientists themselves. Indeed this word and its cognates appear in my fieldnotes and transcripts on over one hundred separate occasions!

Despite this eager take-up, Graeber's first point must be kept in view, that idealist abstractions are hierarchy's endeavour to disguise itself. On this note, I will end with a redacted transcription of a group exchange which follows the

final presentation I give at the Primary Institute, in which I had just raised the question of excitement as an important concept among Society employees.

Senior Scientist One: 'I have a question, I didn't want to place it in the audience because I thought it might be slightly provocative, it's not my intention to be provocative BUT...What came into my mind when I saw this talk was…Did you ever see yourself being the subject studied? Because what you presented today, is exactly how I see this Max Planck society, how it works, WHEN it works. When nothing is going wrong. When this charismatic authority works. So you were thrown into the Institute, and now you present this. And in my opinion it is exactly how the system is designed. So your observation is completely congruent with what we see ourselves. It is slightly provocative.'

Director: 'I very often have discussions with local politicians. They are not interested in any of the excitement we have here. Where are the jobs created? Where are the results? Where are the products? They have this completely utilitarian approach. And if you want to catch them, you have to touch them personally, not as representatives of their Institution. As representatives of their Institution they are not interested in science. And therefore the excitement is deeply personal. An Institution cannot be excited, only a person can be. When you start to talk to them about the interesting science, well, either you touch them personally or they are not interested at all. So it's a deeply personal experience, that actually, makes you believe in it. So how do you transmit personal experience to other people?'

Senior Scientist Two: 'But coming back to what (Senior Scientist One) said. The Max Planck Society also spends energy so that we know about the principle of the Max Planck Society. How it should function. And I think this was then also transported to you.'

(Senior Scientist One nods in agreement).

Senior Scientist Two: 'I heard the vice-president speaking recently, and he was putting it in very similar terms, talking about excitement. It would be interesting to know, whether these are genuinely our thoughts, or are we also receiving these thoughts by arriving here!'

Senior Scientist One: 'You were quite quick. It took me much longer to realise how this thing should work, and how it is intended to work.'

Director: 'I don't know how much intention there is. Well there is an intention, but there is also some personal thing'.

Senior Scientist Two: 'Of course you cannot create it artificially. You cannot just put in some excitement at the top!'

Senior Scientist One: 'But then that is exactly the case where it does not work, where the system just *does – not – work*'.

Max Weber saw charismatic authority as authority of the most radically democratic kind (1948: 248-9). Because the loyalty of their followers depends on the leaders' constant display of personal strength, one which can easily be lost should such strength be seen to wane, charismatic authority – as opposed to other forms – is constantly being verified against demonstrable results. However, what these extracts show are the hidden costs of such a charismatic logic becoming institutionalised. The institutional structure of the Max Planck Society and its funding sources buttress the political dominance of its charismatic leaders, yet for these leaders themselves all that remains present is the purity of excitement. Notice the first two extracts which began this section, in which the directors talk about their excitement. It is situated in a political void. The competitive military industrial complexes of the cold war are shooed away as drivers of space exploration, instead 'people went into space for excitement, not for the space war'. Meanwhile closer to home, another director argues that the reason for the growth of his sub-group was 'my excitement about what I was doing', one which 'more and more…was sort of pulling in from all around'. The asymmetry of influence introduced by his hierarchical dominance goes unacknowledged as a factor which might inflate the 'pulling' power of such excitement.

In this polyvocal exchange we again see excitement in Graeber's terms, as the 'idealist abstraction' through which hierarchy attempts to disguise itself. Senior Scientist One (SS1) raises a point he sees as 'provocative' because it challenges the fit of the ideal to the actual. The Director simply changes the subject straight away. Either he simply does not see what SS1 is trying to say, or he is actively attempting to suppress it. Either way, he deploys all the rhetoric of Pietist, Idealist inwardness to argue against any alternative reading of what excitement might mean. It is 'a deeply personal experience' he claims. Senior Scientist Two (SS2) then brings the conversation back to what her colleague had initiated. There is clearly a consensus emerging among the senior scientists about the ambiguous implications of excitement. She engages in a meta-critique of my interpretation, and of the way excitement might become internalised by Society employees. After another intervention the Director again brings it back to the level of the personal. SS2 then concedes that in order for this abstraction to work it has to be appropriated at the level below the directors, you cannot simply add

excitement ‘at the top’. SS1 remains adamant however, presenting the alternative view, that in some cases ‘the system just *does – not – work*’, suggesting that he is thinking of a specific instance.

vi) Conclusion

Like any other form of social organisation, the Max Planck Society has its own myths, its own ways of rationalising, its own relationship to history and conceptions of what is important. It is these that make it, as one director says, ‘really a *society*’ – as opposed to a rambunctious crowd of strangers, or a mass of selfish actors. As Dumont argues, when it comes to social wholes, there is no separation between the ontological and the moral. To be is to elect to be one thing and not another, to make a value judgement in that very act of being. And of course, as Douglas maintains, we become part of these phenomena larger than ourselves because it is cognitively satisfying. It is the values and ideas explored in this chapter which make possible the forms of organisational attachment we will encounter later on: whether manifested as allegiance to an Institute, a director, or to the Max Planck brand.

All of the ‘representations’ explored in this chapter relate to the value of charisma in some way. While the Harnack principle expresses it fully, the others connect to it partially. The suggestive rather than directive role played by the *Fachbeirat* respects the director’s own human decision-making powers. *Schloss Ringberg* is characterised by inalienability, idiosyncrasy, and meaningful social exchange. The Administrative Headquarters and the Minerva logo materialize the rupture which surrounds the charismatic self, enabling it to determine itself from within rather than without. While a discourse of ‘excitement’ indicates charisma’s generative aspect, its ability to flourish, as Fichte says, without ‘causality’ (1970: 252).

Nevertheless any statement of value will always favour some types of person and fail others. It is clear why the directors of the KWG ‘canonised’ the Harnack principle and the charismatic authority it reified, passing this down in

their speeches to subsequent generations. They even purportedly ‘communicate this to the people who give (them) the money’: Germany's political class. It is the mythic justification for the maintenance of ‘the sovereign as a personal unit and primeval creator’ that underpins their position, as opposed to the sovereignty of a ‘people’ (Schmitt 1985: 47-8), which would mean extending privileges to the other scientists and support staff of the Institutes or the mass of the German population through its elected representatives. To be clear, when they say the ethos is ‘people first, people second, and people third’, they are talking about directors. Just as the dissemination ‘Apple values’ favours an American way of life over those of other regions, the dissemination of the value-idea of the charismatic individual favours directors over their subalterns. Other scientists in the Max Planck Society whose relationship to the organisation is a ticking clock, may not find their situation quite so exciting. It seems fitting therefore, to turn immediately now to the Society's heroic stratum: to see what kind of reality effects this predominant ideology makes possible.

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Figure7

MAX-PLANCK-GESELLSCHAFT

Figure 8

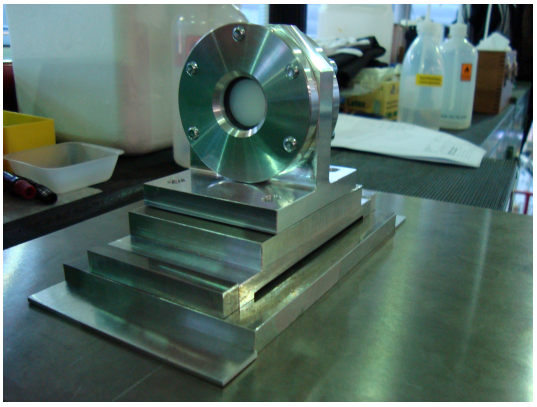

Figure 9

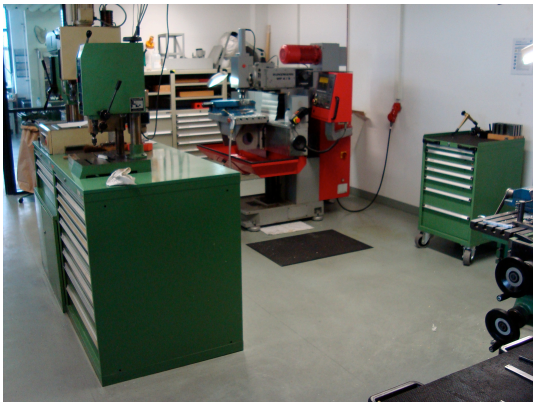

Figure 10

4. The Hero Principle: Directors

'We are the heroes of the era where fighting with weapons is not allowed anymore. It is a Romantic idea...'

Director

The personhood of the director: the head of the basic social unit within the Max Planck Society – commonly referred to as a 'department', or sometimes, 'group' – is a key concern of this study. Key, because, as this director metaphorically implies, there is an unabashed aura of heroism which surrounds him.[1] You could say I am drawn to observe this position critically, simply by the sheer volume of consciousness he seems to occupy among Max Planck employees. He is the keystone in the social arch, without which the whole structure caves in on itself. It is this ideological centrality – enshrined in the Harnack principle – and the consequences this has on their mental and material realities that I call 'the hero principle'. This chapter addresses the question of what the hero principle looks like substantively and in process. The answer I offer can be broadly split into two parts.

The first – carried through in sections i and v – portrays the directorship as representing a particular genre of leadership (heroic headship).[2] This portrayal is carried through in its most abstract form in section i, while later sections are largely endeavours to demonstrate ethnographically its reality-effects. Empirically, all of these sections describe in sequence: the narrative arc of a

1 I use masculine pronouns throughout when referring to the director for several reasons. Firstly, all those directors I meet are men, and so it seems artificial to pretend that my ethnographic referents are anything other than male actors. Secondly, the MPG in its Statutes uses the male pronoun as a gender neutral term (i.e. when they say 'he' they also mean 'she'). Thirdly, a substantial majority of directorships are held by men; for the natural sciences, the proportion of female directors is just over 5% (most of which are in a sub-field of Biology). This may ultimately change, but for now the directorship remains an overwhelmingly androcentric form of leadership, which I have reflected in these pronouns.

2 Heroic headship is my own neologized analytical term, which serves to articulate the kind of leadership specific to Max Planck Institutes. This is to avoid confusion with the kinds of leadership called 'directorships' ubiquitous in corporations and companies.

director's career through the foundation and expansion of their department, the often flamboyant quality of the director as social persona, the manufacturing of rituals and other ways in which the department acquires a specific character, and the slow and determined way in which a scientific vision is realised.

Embedded throughout (but particularly in the opening section) are comparisons to other forms of leadership which have appeared in extra-European anthropological accounts. Besides kingship, of particular pertinence are the charismatic 'big men' of Melanesia, who share much common ground with the directors. It is important to disclaim though, that I am not problematizing this literature as a regional specialist would do, but rather using it as a heuristic light to shine on a wildly different ethnographic context, to make its colours bolder. Moreover, there are various critical subtexts to the instrumental deployment of such comparisons. The first is to contravene what appears to be the prevailing tendency – in Anglo-American anthropology at least – to abandon the comparative project in favour of a post-modern concerns with limitless difference, or a cross-regional application of the same anthropological theory. The second is an intentionally provocative post-colonial reversal of one of the features of Modernist anthropology: the use of Western forms (such as class or the individual) to theorise non-Western contexts. In using non-Western social forms to better grasp Western ones, I invert some of the hidden ontological asymmetries which get smuggled into theories. Finally, in engaging in comparison I obviate one of the tendencies of the directors themselves: who, through the prism of their value-idea, see the directorship and the Society as a unique phenomenon, comparable to nothing and no-one.

Meanwhile the second part of this chapter – continued in sections vi - viii – looks more closely at the existential qualities of the directorship: of how it is experienced by its incumbent. I argue that this arises from a peculiarly German philosophy of the self, with particular reference to the writings of Johann Fichte. If the first five sections of the chapter address a director's relationship to his Institute, the following three look more broadly at his relationship to the personhood which is conjured by the organisation as a whole, and the cultural inheritance of holism (both individual and group) it reproduces.

To the literature on organisations – particularly that inspired by actor-network theory – this chapter has a statement to make about agency.[3] The myriad of ways in which a director shapes the social and scientific character of their department is a plain illustration of agency: the ability to effect. However, the fact that the scope of the director's agency is so much larger than any other member, suggests that agency is not a primordial attribute of their humanity – they do not simply act in a cultural 'flatland' – but the secondary product of a cultural inheritance which eulogises the heroic scholar. Agency, as Saba Mahmood says of her participants, 'does not belong' to the directors themselves (2005: 32), but arises from within the holistic logic of this organisational context which continues this tradition.

i) The rise and rise of a directorship

As one senior scientist explained to me, the 'general progression' of all Max Planck departments is that they 'ramp up until the director retires'. Diverging therefore, from other forms of charismatic leadership, a directorship does not follow a period of slow ascendancy and then gradual or sharp decline. Rather, a momentum is built up in the early years which should last the professional lifetime of the director: sustained through the accumulation of human, material and financial resources. An abstract portrait of the shape of this typical narrative – the rise and rise of a directorship – will now be drawn.

The prospective director must have a glittering past, with the potential to extend this further into the future. Often, such potential is understood to be something very ineffable. When I press one director on what he looks for in a candidate, he refuses to identify any characteristic other than 'promise'. He then further circumvents description by resorting to an analogy, 'It's like the stock market, you buy cheap stocks which will soon be very expensive'. And note, the emphasis is on the *buying*. Although there have been calls for applications to the directorship, this has in the past been deemed a less successful method than

3 Cf. Chapter 1.iii.

actively seeking out promising young scientists, and subjecting them to a lengthy evaluation process which can last anything up to four years. These scientists however, must have already made their name in a given field.

In one department I soon become aware (or more precisely, am *made* aware) of how the director proved his potential, leading to his selection and appointment as the new fourth member of the Institute a number of years ago. The technique he developed – which led to his meteoric rise within the discipline – is almost always mentioned by senior scientists (the only junior I hear discussing it is using the technique itself) and always framed in a 'by the way did you know' fashion. [4] These asides have the unmistakable quality of an origin myth: as although they encircle the same tale, every telling is slightly different depending on the vantage-point of the speaker. There are variations as to the technique itself, the types of sample the director used, and even the impetus for inventing it. Such inconsistencies are irrelevant. What matters is that this narrative is so widely known and retold among the department's senior staff. It is an origin myth because without this potential having been proved in some way, the departmental community would not exist; it is the story of their own beginnings. Indeed one is constantly reminded of these beginnings by the presence of the very instrument the director built, in one of the laboratories downstairs.

The Melanesian big man must also prove himself to be a person of great talent. In Andrew Strathern's ethnography, this is talent for 'making moka': the facility for competitive exchange and the building of critical alliances (1971: 197). One of his participants describes the attributes of those who are likely to become big men, 'Promising boys are those who speak well, learn quickly to make exchanges and to ask for things, and whose eyes are like a pig's, taking in everything around them'. Thus oratory, skill in negotiation, and the powers of intelligent observation are named as some of the vital qualities (ibid: 208). As this description implies, and Strathern notes, the big man system is ostensibly a meritocratic one. If a young boy has a father who is a big man it would probably

4 Cf. Chapter 6.v for an explanation of why it is for senior scientists that these founding tales have such import, as they are the most closely aligned to the director.

assist his advance to big man status, but it is by no means necessary. A young boy does not inherit any title or rank, but rather must earn the status of big man by means of his own prowess. This is wildly different say, from Valeri's study of ancient Hawaiian kingship: in which nobles are only likely to succeed the king if they are able to demonstrate their superior genealogical right – even if this is in fact falsified, for rank rather than merit remains the society's 'regulating principle' (Valeri 1985: 157). This difference also has social consequences for the zeal of the big man's supporters. Because a big man has achieved his status by virtue of his 'exceptional personality' (Hogbin & Wedgwood 1952/3: 252), rather than by kinship, for those who choose to follow him it makes him 'not so much a leader as...some sort of hero' (Sahlins 1963: 290).

Another characteristic of the prospective director, is that they should ideally have proved this potential *outside* the Max Planck system.[5] As one senior scientist tells me in no uncertain terms, 'This is not a structure which creates its leadership. The clergy of the Max Planck is extracted from those who have made their ascent in the public education system'. Glancing through the curriculum vitae of a random selection of directors, these are most commonly the universities and institutes of Europe and America. One could say therefore that appointment is not just a straightforward matter of potential or promise, but that a key aspect of its legitimacy is that it should have been demonstrated beyond the organisation's borders. For this reason the directorship lends itself well ideologically to the appointment of non-Germans. Indeed both on the website, and among directors themselves, the Society enjoys making much of the fact that thirty-per-cent of these individuals come from abroad.

As an ideal, this makes heroic headship analogous in certain ways to what Sahlins famously neologized as a 'stranger-king' (1981). The general principle of the stranger-king is that,

> 'The ruler as above society is also considered beyond it.
> As he is beyond it morally, so he is from the beyond, and

5 Although cf. Chapter 6.iv for exceptions.

> his advent is a kind of terrible epiphany. It is a remarkably common fact that the great chiefs and kings of political society are not of the people they rule. By the local theories of origin they are strangers' (1981: 111).

So both the heroic head and the stranger-king participate in the condition of arriving from elsewhere: from the beyond, a stranger.

The difference between the heroic head and the stranger-king is a question of substance. The essence of the stranger-king is that he is not consubstantial with the community he governs: stranger-kings are not 'of the people they rule'. Stranger-kingship is stranger-kinship, which is why their succession may involve the symbolic murder of this dangerous non-kin, and its subsequent rebirth as a domesticated deity. The heroic head on the other hand, is symbolically (rather than literally of course) kin to his community. When the Idealist self emerges 'out of nothingness', it conjures into being a whole world alongside ('an entire world emerges simultaneously'): hence why these origin myths are so important.[6] Both are fashioned from the same cosmic substance. It is significant that there is no community – in the true sense of the word – that precedes the arrival of a director (unlike that which comes to be reigned over by a stranger-king).[7] It is formed when he begins recruiting.[8]

A final critical characteristic to note of the prospective director, is that there should be a perceptible synergy with the other directors of the Institute. When an extant Institute elects to bring on another director, they place a great deal of emphasis on the social and intellectual 'fit' which should be in evidence before appointing them.[9] Rather than the idioms of fictive kinship which are

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6 Cf. page 32.

7 It is likely however, that the technical staff already employed by the Institute will be there when he arrives, having moved sideways from another department.

8 Cf. section iii.

9 It should be noted that there are two types of directorial appointment: new directors and founding directors. A new director will be brought into an Institute with an already defined research agenda, while a founding director is invited with others to found a whole Institute and define the direction it goes in.

sometimes used to describe the internal members of a department, it is fictive affinity which is deployed when expressing these horizontal relations.

> 'Well, an Institute like ours with four directors. That is a very intimate setting. You get four very strong egos because we look for strong egos. The chemistry between these people determines the success of the Institute...In a university department you have twenty professors and if two of those don't like each other then – who cares? In a directorate of four people, if these people don't get along with each other this may hamper the Institute...It's not always possible to judge this ahead of time. It's like marriage. When you get married you love the person, but ten years later many couples get divorced. Divorcing a Max Planck director is very difficult!'

The choice of language here is telling as it complements the discourse of legitimate sex, animated through the trope of 'excitement'.[10] The organisational complex is reproduced through such long-lasting 'marriages': these collegial directorships being the source of internal fecundity for the whole Institute (that generative aspect of charisma). This is in emphatic contrast to the discourses still to come of illegitimate sex – incest – which surround the idea of reproduction through promotion and inheritance.[11]

His assertion meanwhile that 'divorcing a Max Planck director is very difficult', indicates the lasting social transformation inaugurated by appointment. Only in highly exceptional cases would a director be forcibly removed from his position (for instance if he has 'gone mad'). It is consequently on appointment that heroic headship demonstrates a major divergence from bigmanship. While the big man dominates precariously – as their status can be lost if not continually proven to their followers – directors once 'called' (*berufen*) to become a member of the Society, remain so indefinitely. In this sense, they are transformed into

10 Cf. Chapter 3.v.

11 Cf. Chapter 6.iv.

what Godelier identified elsewhere in Melanesia as 'great men', who come to inhabit their social function (warrior, shaman, or hunter) by virtue of their participation in a series of initiation rituals (1986). Appointment and initiation are analytically identical in this respect: as once appointed/initiated the incumbent cannot then revert to their previous unappointed/uninitiated state. Even if a director is forcibly removed from an Institute, they still remain a 'scientific member' or the organisation for life.

A director is usually appointed in his mid forties.[12] Some directors may be as young as thirty-three, and others in their late forties or even early fifties; but although these two extremes exist on the spectrum, they are generally less common. The intention is that a department should last between twenty or even thirty years; and as the compulsory retirement age is sixty-five, one can see how an age-range between thirty-five and forty-five would be the desired median for new incumbents. This again, is echoed by what Strathern calls, 'the major big men', who are aged anything between thirty-five and seventy years old (1971: 212). The Institute should then last the working lives of its directors. One way of ensuring the longevity of a particular Institute, is therefore to bring in new directors who are younger than usual, as its future is concentrated in the respective futures of these persons.

After a director is appointed, he is offered a substantial degree of agency in dictating the material culture of his domain. This might include the location of walls inside the building (the arrival of one director led to an entire reconstruction of the interior of one Institute's wing). For a founding director, it might even include dictating an *entirely new* section of the building: as these individuals can work together with the prize-winning architects to co-create the kind of space they desire.[13] In this sense, a director's scientific vision is quite

12 The appointment of a new director is a decision taken by the whole Society; however the existing directors of Institute will be closely involved in the whole process. The finer points of this process are beyond the scope of this study; although for reference, all Max Planck Society procedures and regulations can be found here, http://www.mpg.de/186606/Procedures_and_Regulations.

13 The Max Planck Society has always taken a contemporary and often ambitiously aestheticised attitude to its architectural culture. These are no drab labs. Each Institute looks starkly different from the next, often with a vivid

literally sheltered in the most material of ways – as architectural form should follow scientific function – and if a director requires a home for new instruments, he should be given one. Walking round an Institute with one of its founders, he points to another multi-storey building in front of us. 'When this building was being built, I went up to the architect and told him "This is too small, we need space for the supercomputers"'. As a consequence, the architect and he agreed to build an entirely new wing to house these machines, which were to be a vital part of the new Institute's research purpose.

As the years roll by the director becomes – through such decisions – increasingly congealed into the material culture of an Institute. This is particularly vivid in the Secondary Institute. Its spacious high-ceilinged 'halls' contain machines over twenty-feet long or high, in which metals are shaped and tested. However, while some 'halls' are populated with working scientists, others lie completely dormant. One entire hall, full of such machines, is entirely devoid of people. On enquiring why this is so, the resident technician tells me that only a few years ago, this room would have been full of people. However, the respective director whose experimental programme they were realizing died not long ago, and the Institute has still not found a replacement. Only a director's personhood can animate an Institute's equipment; and when he leaves, these material residues have a strangely morbid, ghostly quality to them, like the archaeological remains of a glorious time gone past.

These material expressions of one individual's potency have been beautifully theorized by Jean-Pierre Warnier in his study of the 'pot-king' of Cameroon (2007). For Warnier, this form of kingship entrenches and reproduces itself socially in domains beyond the reach of language. The personhood of the pot-king is literally scaled up, extended: firstly into its 'embodied objects' (ibid: 161) (the drinking horn, calabashes, and raffia wine etc), then into the walls of the palace, and at a higher level, the walls of the city, all of which through processes of ritual transformation and expulsion, enact a cosmic quality-control of the king's people. These three 'material ensembles' (ibid) are iterations of one

play of shapes, colours and outdoor sculpture. This is true even for the older Institutes, such as the Institute for Iron Research in Düsseldorf, which was designed in the early 1930s by Germany's celebrated Bauhaus School.

cosmological entity, kingship, and it is through their inescapable materiality that the king's power reaches into every corner of social life: at its most expansive, his 'skin', a homologue of the city-walls, quite literally containing his subjects.[14] Warnier concludes, 'There lies the trick of power: like the masquerades of the palace, it proceeds under the cover of its masks. It hides itself behind a chattering of words that betrays nothing of the secrets written in the flesh' (ibid: 268). Heroic headship is equally embodied, equally inescapable, and for the large part, equally silent. It lies in the instruments, the walls, even in some cases, a whole architectural structure itself. A director's scientific vision exists beyond the realm of discussion: it is never up for debate as it is the very substance of collective life.

This substance does not come into being fully formed, but must be actively cultivated. Particularly in its early stages therefore, a department is an expanding universe. The director will start off with a small team of people and a cluster of equipment, which should then grow incrementally year-on-year.[15] Commonly he will bring scientists with him from his former workplace, setting them up as group leaders, and begin 'recruiting like hell' for new Ph.D students and postdocs. Within the first department I visit, still less than ten years old, this founding period is within the experiential memory of some current members and recent alumni, who communicate the sense of raw scientific potential that it offered.

> 'We started kicking people out of the rooms which were being squatted by another department. Setting up a department from zero is a balancing act, there was no department just a lot of rooms. At that time it was very

14 The significant *difference* is that when the king is replaced his successor will have the same relationship to the same material culture. It is highly unlikely that the same machines would be reanimated by a subsequent director. This contrast will be pursued later in the section.

15 Exceptions to this human 'tabula rasa' – in which a director begins with a small number of scientists he is already acquainted with and builds from there – are those Institutes founded in the former East Germany after the collapse of the Soviet Union (cf. Chapter 2.i). As part of the process of reunification, these founding directors were obliged to recruit former East German scientists. As a result, one director began with a ready-made staff of 150 scientists.

> personal, we would sit down and discuss everything together. It was not even clear what the field was, so we had to define the problem we would address. We even came up with “ten commandments” to decide what we would and would not do. It was almost as if we had to form a club'.

The biblical language of creation used here, suggests that a department is a similar ontological entity to the 'world' of the German Idealists, i.e. a social, material and moral order which emerges *ex-nihilo*, along with the directorial self.

There is also a certain nostalgia among these scientists – hinted at above – for the days when the department was more like a 'club', particularly for the intimacy with the director which was then possible.

> 'One of the neat things about the department at the beginning was that it was very collegial. Before it was so much smaller. If I saw something I would say, “Hey – A, come and look at this under the microscope!” Now there's more administration, he's less accessible'.

For members, the increasing social abstraction that is an inevitable corollary of any departmental growth can thus be felt as a loss rather than a gain, as the Janus-face of the director begins to look outwards rather than in. One index of a director's scientific involvement with his community is the proportion of publications of which he is a co-author. As you see from **Figure 11** although the number of publications rises year on year, so the proportion that are co-authored by the Director A exhibit an overall tendency towards decline. This is not because he is expending less energy, but rather that there is a practical limit to how many scientific projects he can become involved with.

When I arrive at the Primary Institute, expansion had continued so steadily that the availability of space has become a pressing concern. The department I am hosted in has grown from 'zero to seventy', so its designated

walls are no longer able to contain it. Increasingly, rooms that were formerly laboratories have been converted into offices, and some Ph.D students who are in the process of writing up, and so have no need to be near their instruments, are relocated into an adjacent building a hundred yards away. For my part, I am moved week by week from one desk to the next, occupying seats that conference visits, holidays or illness have spontaneously made available. The group leader whose care I am in takes pains to kindly apologise for my enforced rootlessness, explaining that 'space is our biggest limitation here' – although in fact my ability to transcend office boundaries is an enormous advantage. Interestingly a subtext could be read into this statement: that is only spatial rather than material, financial, or intellectual resources, which curb the activity of their department.

That a department is able to expand beyond a certain point is not a prerequisite entitlement of every director, but depends on his ability to attract external resources. Aside from the consistent base funding provided by the MPG to every department, a director is expected to seek out 'third-party funding' to augment his domain's internal capacities. These 'third-parties', may be government-sponsored bodies such as the Deutsche Forschungsgemeinschaft (DFG), the European Union, the European Space Agency or the US-based National Institute for Health. They may be scientific prizes awarded to outstanding individuals, such as the Max Planck Prize or the Leibniz Prize: the latter involving a gift of 2.5 million Euros which must be spent over a maximum of seven years. Although 'basic research' directors make much of the Max Planck Society's independence from commercial science, these 'third-parties' may also come from industry. As illustrated in **Figure 12**, the quantity of third-party funding also evinces a sharp upwards tendency across time – particularly in the early years. There is some pride taken in the acquisition of these resources, made clear to me by the fact that senior scientists go out of their way to make sure I have been given a comprehensive list of third-party funds as part of my work. When a document is veritably thrust into an anthropologist’s hand, the latter must be aware that she has stumbled upon an entity in which pride and identification are invested.

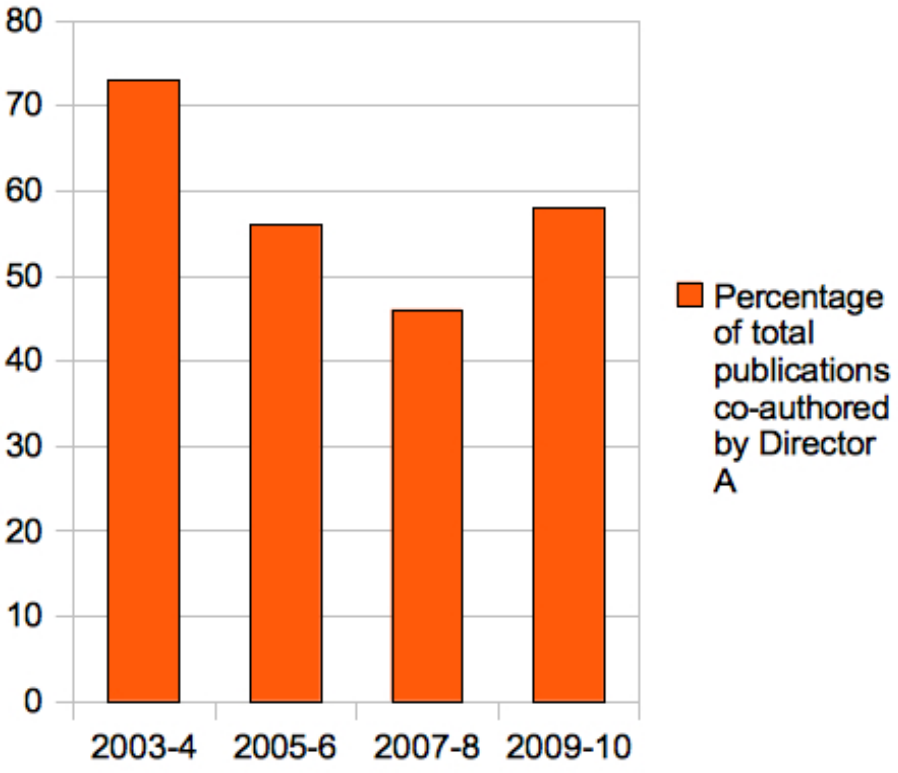

Figure 11.

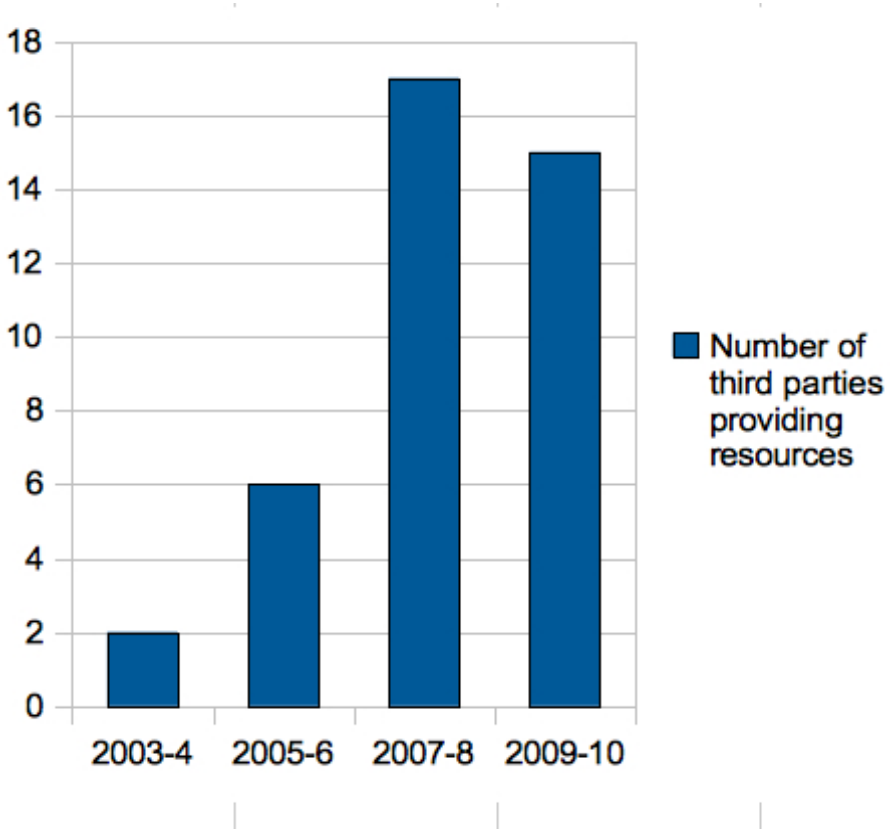

Figure 12.

Sahlins in particular, makes much of the skills in resource accumulation, which make possible a big man's rise to prominence. Although his ironical comparison to a rational money-making Western businessman is a caricature, it does distil the concept that a big man's wealth must be generated through his own energy and ambition. 'The Melanesian big man seems so thoroughly bourgeois, so reminiscent of the free enterprising rugged individual of our own heritage. He combines with an ostensible interest in the general welfare a more profound measure of self-interested cunning and economic calculation' (1963: 289). Following Malinowksi, Sahlins paints the big man as amassing a 'fund of power', by winning in the sphere of competitive exchange, and thus placing other people in his debt (ibid: 292). In Strathern's ethnography, this is 'moka': an intangible quantity, the relative difference between the value of one gift-giver's pigs, shells, and other 'extras' (1971: 101) and another. From a practical perspective, it may seem a little stretched to compare a director's seeking of monetary awards from global science funding bodies, to the competitive exchange of pigs and shells; but theoretically, both phenomena speak to the same Malinowskian 'fund of power', which must be accumulated if a group's productive activities are able to expand. Moreover, quite apart from their value as generative assets, 'moka' and multimillion Euro grants, are desirable accolades in the 'war of status' (ibid: 95).

Such resources are generally expended on either one of two things: equipment or people. As we shall discover in the following sections: it is the director's prerogative to decide on which of these two things to spend, his decision to distribute resources this way or that.[16] If he wants to purchase a new instrument for 300,000 Euros, this may mean sacrificing potential Ph.D students. On this point, while at the beginning of a director's career his team may be discussing a vision of science – laying out their 'ten commandments' in free-floating discussions – as the years progress the research direction of each department is increasingly delimited by their experimental capacities. If a director does choose to make an outlay of 300,000 Euros on one particular piece

16 Unless the 'third-party funding' has been applied for and awarded to a group leader. The latter may then bring in new doctoral students and/or postdocs, depending on how far the funding extends. They may also fund their own position from these resources and so generate a degree of financial (and correspondingly scientific) independence from the director.

of measuring apparatus, this implicitly commits him to a specific research agenda in the long-term. While a department may start its life as something inchoate and unknown, expensive instruments such as these act like the ballast of a sailing ship, preventing it from rocking too far this way or that, steadying its course in a given direction. When one department does acquire a very rare and expensive device, the postdoc under whose care it will be placed is visibly delighted. He laughingly calls it 'my baby' and excitedly invites me to dip my nose in and smell the unsullied sterility of its new interior. The larger context of such a purchase thus has human consequences. The investment in the machine, is certifiably an investment in the specialist skill of this individual who will be its primary carer. As a director must commit to certain research directions through the purchase of new machines, so he must also commit to those who possess the knowledge to use it – at least in the medium term.

When a director reaches the age of 65, although he remains a 'scientific member', his active career as the leader of a department must come to an end. He may of course, die before this point, or in unusual cases, leave the position prematurely, but in almost all of these circumstances, a whole community will be dissolved and its members dispersed across Germany and the world. This dramatic dissolutions can create a lot of 'ill-feeling': particularly in one recent case, in which an entire Institute was closed down in the wake of several simultaneous retirements.[17] According to some, the closure of a department is 'where the system has its biggest problems', as fields which should have continuity are halted in their tracks, and 'the uncertainty of it all' can be paralysing.[18] At this stage, it would be unheard of for a group leader to ascend to the position of director and carry on his legacy. However, in highly exceptional cases there is one means of continuity. In the wake of one director's recent unexpected death an invitation was extended by the Society to the director of another department in a similar field to take his place. So in effect one director is temporarily managing research communities in two different Institutes in two

17 As is so often the case, when I press this particular interviewee on specific manifestations of such 'ill-feeling' I am met with a wall of silence, couched in the language of vagueness and ignorance.

18 The death of a big man can be equally chaotic: causing an 'objective crisis' in the circuits of exchange (Strathern 1971: 191).

different cities. It says something quite profound about the Society's investment in its elite when it decides to appoint one director to run two different departments instead of simply promoting a senior scientist in one of them.

So heroic headship, despite being similar to a stranger-king in bringing an outsider into the position of highest status, must be fully differentiated from kingship in general. If charismatic authority is pure immanence, kingship is pure transcendence, and no part of the social order can truly transcend a director's departure or death (the previous exceptional case being a temporary solution).[19] This lack of transcendence is in evidence both materially and socially. The room full of abandoned machines I stumbled upon in the Secondary Institute are dissimilar to the embodied objects of Cameroon's pot-king, in that when the director leaves they have not been simply transferred to a new owner. Similarly as I shall explore in Chapter 6.iv, it is critical to the Max Planck order that the directorship is – unlike kingship – a strictly non-inheritable position. The hunt for a new head in a new subject area must begin again from scratch. In these respects, heroic headship reveals its overarching allegiance to forms of charismatic authority and bigmanship, rather than their rank-oriented alternatives of kingship or chieftainship (White and Lindstrom 1997).

To sum up, although once appointed the heroic head achieves a position of relative safety and security – with a guaranteed steady stream of resources – the position retains some of its big man qualities. They still have to attract people and resources to their department by building up a fund of power. Despite all having the same hierarchical status – as fellow great men – directors thus still vie over that other alternative big man status which brought them into the position in the first place. Having traced this normative trajectory, I shall now turn to these individual directors with greater specificity. How do they inhabit this position?

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19 For me, the busts which populate the Max Planck Administration and the Institutes (see Figures 6 and 7) symbolically represent this lack of transcendence. While the king has not one body but 'two' (Kantorowicz 1957) – the second the transcendent social order concentrated in his person – the heroic head is not represented as a body at all, but a severed head, cut off at the neck: each face displaying the unique features of its countenance. Each one betokens an immanent social and scientific vision which rose and fell alongside them.

ii) Charisma

Describing heroic headship as part of a larger genre of charismatic leadership, does not necessarily mean that all directors are charismatic in the sense that it is conventionally understood. However, charisma as an analytic category and charisma as a personal quality do often converge. The position of director provides an occupational space within which such charisma is positively relished; and so in many cases it is a quality which flourishes as it is morally correct that it should. Just as Sahlins argues that the big men do not simply emerge by chance but rather are 'a specific institutional response to a particular type of society' (Godelier 1986: 164); so charismatic directors do not emerge by chance but rather are strongly encouraged to by the structuring effects of the Harnack principle.

Charisma is a famously elusive quality: whether understood as a personal attribute such as genius or creativity; or an intersubjective effect, such as magic, power or excitement, it is one which by virtue of its very nature transcends characterization. Nevertheless, I will try to demonstrate the charisma I feel intuitively, emanating from these directors, in ways which are empirically valid.

Firstly, directors show a strong tendency towards the usage of analogy and metaphor to communicate their thoughts. If we understand the capacity for syncretism across silos as the very basis of creativity itself, then it is here that directors demonstrate their cerebral proximity to the world of artists. These come in a myriad of forms: whether describing the very high turnover of scientists in the MPS as 'not a steady-state' (appealing to the scientific notion of homeostasis), or the postdoctoral period as a *'Walz'* (the German medieval tradition of apprentices embarking on a long itinerant adventure before returning to the guild). However, those that seem to illustrate this point most powerfully are when science is compared to art itself. One department is engaged in modelling certain biological phenomena, and its director attempts to explain this process of modelling with reference to the painter Pablo Picasso. It was ‘no coincidence’, he tells me, that it is a highly gifted representational painter who ultimately developed and became known for a style as abstract as cubism. ‘The square only

means something if it is the essence of a really complex story', his point being that one must understand natural phenomena in their complex concrete specificity, before one can build models and equations to simplify them. For him, the scientific mathematical model, just like the artist's gaze, is a form of interpretive abstraction based on a profound attention to empirical detail.

Secondly, several directors have clear extra-mural interests in non-rational pursuits, whether literature, painting, or most commonly among scientists – particularly the sciences which have their roots in mathematics which is increasingly most of them – music. One director makes reference to various fictional works throughout the discussion, and insists on printing me out a reading list to assuage my own ignorance. He also has an exuberant attitude to fashion, as I bid him goodbye he turns to leave the building with the affected air of an eccentric patrician gentleman, walking with the assistance of a large canary-yellow umbrella. Another, with his Spanish guitar propped up just behind his desk describes himself – apparently without any sense of contradiction – as a 'professional musician'. He regularly plays in a band in his Institute's own small music venue nestled amongst the laboratories in the basement. While another, although conceding that he plays the piano, says that it is 'only privately, I don't perform'. As if it would be expected of him that he should be both a Max Planck director and a concert-level pianist!

I will conclude with specific reference to director A. In the estimations of his subordinates, A appears to embody the charismatic ideal. Juniors take pains to communicate to me how intellectually stimulating he is: the source of a 'fountain' of original ideas, and one who can guide them with his remarkable insights through periods of confusion. This is made particularly clear in one of the group meetings which occur weekly, attended by around fifteen scientists and one technician, all working under the supervision of one group leader. These meetings are often an opportunity for the scientists of the group to present on their work and receive feedback. One postdoc stands up, and begins to explain the difficulties of using a particular piece of equipment, with a slide entitled – in slightly clumsy non-native English – 'Correlation between experiments and personal history'. The slide shows a number of bullet-points, which initially

chronicle a series of scientific failures as rhetorical questions: the possible reasons why this instrument is not generating analysable data. As the points continue, the questions become more and more introverted – hence the correlation between experiments and personal history – and the scientists in attendance start to giggle. They soon descend into a tragi-comic existential panic, ending with 'What is work?' and finally, 'Are we alone in the universe?' The audience collapse into laughter as he clicks to the next slide. On it, is a picture of Homer Simpson looking vapid and confused (as a popular cultural archetype of lovable ignorance punctuated by moments of banal epiphany), with the caption underneath reading, 'But then I saw the light!'. He flicks to the next slide and a picture of the director's face comes up, followed by a picture of The Simpsons playing as a happy family below. Everyone is in hysterics, group leader included. The caption of his next and final slide deduces that 'we are not alone in the universe'.

The process this powerpoint narrates is fairly clear. The scientist, working away independently with an instrument, reaches a seemingly impassable wall. He keeps conducting experiments, but the data produced are little more than 'noise', utterly useless. He feels the despondency of scientific failure, which leads to a spiralling panic about all kinds of matters – as intellectual problems have a nasty tendency towards cognitive centrifuge. He meets the director, and the latter's input is nothing less than messianic. The biblical terminology evokes the god-like power that director A has unleashed ('then I saw the light'). This divine intervention resolves his scientific problems and ultimately banishes his existential crisis.

A ‘particular type of society’ can thus offer impetus to a particular expression of the human personality. Director A embodies the idealized form of the directorship in the sense that he *should* be intellectually pre-eminent (interestingly, the co-present group leader does not seem at all diminished by this postdoc's bold admiration), and act as an inspiration to his community. Personalities do not always match the ideal, but when they do this overlay is felt was the best of all possible worlds in the moral universe of the Max Planck.

The following three sections will now engage with the prototypical questions one must ask of the charismatic leader. How is the community enlarged? And how are its activities designed and managed?

iii) Hiring

Unlike a university system, there is no institutional protocol for job applications to the Max Planck Society. Rather, a director handpicks every member of his department, without the need to accede to any higher chain of command, or obligatory bureaucratic process. To one, I pose the question of where precisely his directorial authority is located. His response is revealing, replying without taking a breath, 'If you tell me that you want to work here, and I have a certain budget and I say, okay I like you, you can start tomorrow. I can do this. I don't have to ask anybody, or to justify it.' To him elective personnel are power's illustration, that he could – even as the head of a department of the natural sciences – bring on board a social anthropologist without any questions asked. 'What we do is our business', he says quite forcefully. In this way the selection process may operate through the ineffability of intuitive judgement, as simple as 'okay I like you', rather than a thorough rummage of the curriculum vitae. Indeed directors – and sometimes their subalterns – often make much of this explicitly 'non-bureaucratic' approach to human-resource management. A director and his Ph.D student laughingly tell me a story, that when the latter rang up to inquire about professional opportunities, the former inquired spontaneously, 'Can you be here in twenty minutes?' The request was met, and employment granted there and then. That this is made much of in my presence, an anecdote enthusiastically volunteered, speaks to one of the key ways in which directors' understand their role. Only they know the watchword to open the gates, and can speak it on a whim, 'I don't have to ask anybody, or to justify it.'

This does not mean to suggest that they may not choose to delegate some of this responsibility, or attend to the responses of their colleagues before fetching the key. One director with a sense of history invents a tiny democracy when apprehending new recruits. He describes his self-generated 'Prussian three-

vote system'. He has a vote, his group leaders have a vote, and the students have a vote, all of which are dutifully counted after a so-called 'application seminar'. Yet even in this context, democracy appears to be more food-for-thought than a sincerely institutionalised principle. He himself undermines it with self-satirizing candour, 'I listen to them, I ask them, and then I decide of course. It's called absolutism. Consultant absolutism.'

Now, a word or two on these 'application seminars'. These are presentations of scientific problems the prospective candidate has worked on, theoretically open to all department members, lasting around half an hour, and always followed by questions from the director and group leaders and sometimes others. All of those I witness involve potential Ph.D students. However, they are also given (albeit less commonly as there are far fewer openings) by those at the upper echelons of this hierarchy.[20] They are referred to by multiple directors, but are by no means universal. In the Secondary Institute such seminars are conspicuously absent. As the Institute is located in a less attractive town for ebullient young twenty-somethings, and some distance from the nearest university, they suffer somewhat from a dearth of applicants. When I query this phenomena, 'we're just happy when people come' is the self-deprecating reply. They are therefore a familiar ritual form for Max Planck scientists, but are only installed according to the director's choice.

In one department I visit, application seminars are very frequent: so much so that in one month alone there are no less than three potential Ph.D students advertising their wares. These may be wildly effervescent or relatively somber occasions: depending on the mood of the day, and the tone set by the speaker. Most commonly there are between ten and twenty people in the audience, so it presents an opportunity for the department to commune, and take stock of those who wish to enter its hallowed walls. One such occasion involves a very smart and confident young woman who strikes up a skilful rapport with some members of the audience before she starts, with an impressive command of English given she is a non-native speaker. Her self-assured demeanour and slick powerpoint

20 This goes as far as the group leader level. If there is a question of inviting a prestigious scientist with a view to possible nomination to a directorship, this will be referred to as a 'Colloquium'.

presentation seems to engender sympathy in the audience. The director nods his head slowly and looks fairly satisfied. However, half-way through she is interrupted by a stern senior scientist, who launches a critical and rather aggressive attack on the nature of her data. The style visibly puts her off balance and she stumbles to respond cogently to this sudden critique. 'Is that from MIT?' he asks fiercely, querying the validity of her results. Some members of the audience exchange looks, and the atmosphere has shifted in an instant from enthusiasm to awkwardness. At this point the director intervenes, addressing the inquirer but also the clearly the rest of the room, 'You don't trust MIT?' He activates a playful rivalry between the MPG and a major American institution, to reframe the encounter as a collective joke rather than a personal attack, redirecting the criticism away from the speaker towards MIT, a subtle but effective intervention which modulates the room's emotional tenor. On cue every member of the room laughs and the atmosphere softens once more. Thus we see something akin to 'consultant absolutism' in action. The director is gauging the response of his underlings (positive as revealed by the easy rapport before the seminar, and incidentally afterwards) and all the while forging his own position. If this is sympathetic he will actively cultivate a mood among the others which reflects this. In this case, he chooses to step in before the lone wolf begins to form a pack, and rescue the young candidate from the threat of symbolic violence. Others are not quite so lucky.

Particularly for prospective candidates at the postdoctoral level and above, it is – and is expected to be – the director's renown and prestige which draws them towards a specific Max Planck department.[21] One way this kind of fame can be dispersed in the wider scientific community is through departmental alumni (annually cultivated through 'alumni meetings'). Their subsequently mobility expands knowledge of him in the far reaches of the globe, creating personal channels through which others can flow back to the centre, 'the more role models there are, the more tracks, the better the students are who come'. In this vein directors often note than in the early years of their tenure they sometimes have trouble attracting enough applicants, a minority of scientists

21 One postdoc confesses to discovering the department 'on Google', and appears so shame-faced about taking such an impersonal route that he implores me never to tell the respective director.

have to 'take the risk' by attaching themselves to a neophyte leader, but as the years fly by dearth more often than not inflates incrementally into glut, as scientists graduate and networks proliferate.

It is also very consciously cultivated by the director himself, actively giving seminars, lectures, attending conferences, symposiums and other forms of performance, at laboratories across the world, to attract potential applicants. 'Name-building, reputation-building, brand-building. This is what we do'. Many current members record peripheral points in their careers, when they were actively looking for openings, and happened to meet the director at one such event, which quickly led to being offered a position. 'He didn't even ask for a CV or anything, he just said come here and give a talk (an application seminar). It was kind of...fast'. One member was even already enrolled in another Ph.D programme in a different continent, and decided to abandon it in favour of an up-an-coming director's alternative offer of a place. The specificity of this individual was a big pull factor, one heightened by the reactions of his former colleagues, 'everyone raved about ____ ____, how exciting it would be'.

Such 'name-building', is intended not only to encourage scientists to apply, but also to reassure them that their subsequent career is in safe hands. Following 'fame' is expected to be a more likely route to professional success – and thus fundamental for those scientists with research ambitions. As one director puts it, 'Life is a deal. They have to see that what you offer, the famous golden thread, will bring them a career'. Thus the 'golden thread', assiduously woven by the director, is not a distraction or a side-issue for everyone beneath him. As the individual through which the collective is expressed the 'fame' of director and department are synonymous: and as a result, it is something they take personal pride in. This is very similar to the unity that the big man concentrates on his person: the notion that 'the one man is likened to one clan, is its homologue' (Strathern 1991: 212).[22] Being encompassed by a 'man of renown' means participating in a social unit with considerable caché (Sahlins 1963: 290). One Ph.D student who has decided, on finishing, to leave science altogether,

22 However there is a subtle difference here; the director is a unique entity rather than a simple conglomeration of relations (cf. section vii).

explains that if he did elect to stay, his attachment to the director would be a 'huge advantage'. He continues, 'He's really well known in the community, this is a huge asset for my own personal development'.

iv) Social Engineering

Directors do not only minister the entrance of new incumbents; they also take a primary role in the unfolding of social life. Indeed the ubiquitous adage that 'every department is different' – which usually precedes my participants' explanation for why an anthropology of the Max Planck Society is impossible – sounds to my ears very much like the multiple iteration of something universal. Every director is united in their capacity to engender this difference as they see fit. Directors are, as a consequence, expected not only to be scientific visionaries; but also founding members of so-called 'intentional communities': with their own peculiar rituals, habits, and even languages. This social vision can be realized in any number of ways.

As I have suggested, in the beginning this may be through material culture. When the director of a mathematically-oriented department arrived at his new Institute, he positively relished this 'once in a lifetime opportunity' for social engineering through interior design, when asked how he wished the space to be furnished. 'So I said, I want some green, I want some plants in the hallways so that people feel comfortable here, and I want whiteboards so that people don't have to go in their offices to continue working. If I want people to communicate it must be possible for them to remain there'. The idea is that if members bump into each other in the corridor, and begin to talk about science, the tools should be available to facilitate the continuing of their discussion in a more ordered way, scribbling down equations or diagrams as they go. These kinds of reflections demonstrate a clear-eyed sensitivity to the behavioural effects of materiality: remarkably common among these scientists.

Director A possesses a very clear idea of the genre of social interaction he is aiming at: one he calls, 'the philosophy of mixing'. This involves first and

foremost arranging the seating plan. Each office will generally contain between three and five occupants, averaging around four, and Director A asserts that no two people from the same group are allowed to sit in the same office. As each group focuses on a different scientific topic, the purpose is to create a structured situation in which members explain their research to each other, and thus learn in an informal way about other subfields the department as a whole is working on. In addition to this, the female lab technicians – rather than being seated together in the same room as they are in the Secondary Institute – are scattered throughout all of these offices, and so in this way 'mixed' with the scientists. No more than two technicians occupy the same office, and in some cases it is only one. Again the technicians, as will be later developed, are carriers of specialist knowledge, so if they are scattered throughout the scientific cohort they can be queried 'as and when' in an unintimidating space. Director A explains his 'philosophy' to me quite carefully and without prompting, even asking whether I had 'noticed' these features independently. It is clear even before he articulates it explicitly, that these arrangements emerged from a very 'active decision' on his part. 'I didn't want clusters of groups', he remarks, with an assurance born of lengthy reflection.

The 'philosophy of mixing' extends further than the seating plan. There are frequent 'coffee and cake' rituals, to celebrate birthdays, weddings, arrivals and departures. Sometimes these would emerge simply from a playful round-robin email declaring 'TGIF', 'thank god it's Friday', and at others from a member of the department going abroad and returning with some exotic foodstuff they wish to share out. Director A, despite being extraordinarily busy, always makes an effort to drop in at least briefly, to as many as he can. At first glance such occasions seem spontaneous, the natural consequence of gregarious social beings when cohered into a professional community. However on meeting the Director A shortly after one such event, it appears they too, are part of his 'philosophy'. 'And these social events, even though they take time, and augment my body fat (he chuckles)...they have a very important function too in that context, that even though it's a social interaction, people can also communicate about science'. Even these small-scale potlatches, which occur once, twice or even three times a week, emerge from a functionalist vision, that if you wish people to 'mix' and

exchange about science, you must make sure the occasions exist in which they are able to do so. Social and scientific production are thus threaded together seamlessly (we will re-encounter this in the following section).

In addition to encouraging people to 'mix', director A is also 'striving...to have people feel loyal, and an integral part of the department': meaning that he is 'ready to spend the time it needs...whenever problems come along on the personal level'. To this end, A is always surreptitiously watching over his flock, taking little interventions, and making mental notes about things said and responded to. In one case, on a day excursion's to a cathedral, some of us are taken on a tour of the cathedral's interior. Right at the beginning, however, one of the senior scientists is rather viciously told off by the tour guide for speaking to his neighbour out of turn. The former is clearly quite put out, and disappears altogether from the tour soon after, wandering the town on his own instead. When this incident is mentioned in passing to the director his brow furrows and he murmurs, 'hmmmm....strange' in a thoughtful drawl. Soon after, I see him sitting beside this individual in one of the seminars. They are clearly enjoying themselves, laughing, joking, and making asides. The scientist tells me emphatically later in the day, how 'great' the director is, he clearly feels pleased at the latter's attentiveness and seems to have contentedly returned to the fold.

Director A also micromanages a community of sentiment in a more obvious way, spontaneously organising what he names a '*Meckerstunde*' for the whole department – 'for which there is no English translation' (effectively an hour dedicated to complaints). We are all gathered together in the seminar room, and despite calls from the audience to switch to English, the meeting is conducted in German: the reason given that the administrators and technicians are also there. The director speaks in hushed, quiet, soothing tones: telling us the intention of the meeting is to provide a forum for 'things you like or don't like' in the department or the Institute as a whole. However, this is qualified with the statement that 'if it cannot be aired in public, it should not be aired here', meaning that these should be complaints of a general, rather than an intimate, sort. The event ends up lasting much less than an hour, as, after a slightly awkwardly manufactured discussion about the unreliability of the local trains, no other

'complaints' emerge and we all disperse. This is the first of such meetings, an experiment designed by the director to test whether it serves to resolve issues before they settle and seethe under the skin of the community. Yet it may be that members register the warning, and are reluctant to voice any kind of complaint, for fear of acting out of turn. In any event, the occasion has the self-conscious feel of unfamiliarity, rather than the kind of habituated ritual which one wears with the comfort of an old coat. It serves to indicate the constant inventiveness of the director in ensuring that every member feels 'an integral part of the department'.

Returning to a more general level, although one which the previous example flags up, each department also constitutes a designated linguistic community: the language, of course defined by the director. The power over verbal exchange is assumed by those beneath him to be so great that 'it's not implausible for them to say, “Hey, let's only speak Spanish”'. I never hear of any Spanish-speaking department, but there is a subtle distinction between an English-speaking department and a German-speaking one. Most directors will announce that 'the language of the department is English': betraying that this has been decided upon rather than arising simply because the language of science is English.[23] In one department in the Secondary Institute however – although never stated explicitly – the language is clearly German. This is the one in which lunch-table and coffee-break conversations are conducted, and the director appears visibly happier and more relaxed when we communicate in this tongue. If members speak too much English he chides them playfully, telling them they have to 'learn German'. Thus it should by now be clear that in many different ways, linguistically, spatially, and even emotionally, the director has a myriad of opportunities to define the character of his department (and often takes them but is not technically obliged to).

23 Of course in offices and along corridors, I hear Spanish, French, German, Danish, Hebrew, Chinese, Italian, Farsi and Russian, and probably many others unwittingly; yet these do not form the *designated* language community.

v) Scientific Engineering

It is significant is that these social visions are by no means arbitrary. The potential functionality of such designs has already been hinted at, in the sense that 'coffee and cake' rituals enable members to 'communicate about science'. Yet with each director it often goes much further. *The structure of social exchange should mimic, and thus effectuate, the relations necessary for scientific production.* Director A's utopian vision of a department in which all members are 'mixing' with each other daily, swapping practical and theoretical knowledge, is not the consequence of some peculiar partiality for syncretism, but rather that he wishes to establish a working culture of 'interdisciplinarity'. The disciplinary spectrum encompassed by this department is remarkably broad, containing representatives from Biology, Chemistry, Physics, Biochemistry, Biophysics, Biotechnology, Biomedical Engineering, Engineering, Mathematics and Materials Science, and one of his scientific ambitions is to bust existing silos in the service of unanswered questions. Thus the 'philosophy of mixing' people is utterly synonymous with the 'philosophy of mixing' disciplines.

Now one could suggest that Max Planck departments are always about 'mixing' disciplines, because one of the avowed purposes of the MPG is to provide a space for research not possible within the strictures of the German university system, where the main purpose is train young scientists in the inherited specialisms. By orientating research around an individual rather than a discipline, it could be said that transdisciplinarity is thereby factored into the MPG approach. This is true to some extent, but within different departments, the particular form it takes can be imagined quite differently. To reiterate, this again relates to the material and social conditions necessary for a specific form of scientific production. It can be illustrated with reference to two further directors.

Director B runs what is an almost entirely computational department, i.e. one in which 'experiments' are carried out on computers in offices rather than with instruments in laboratories. Being the head of this virtual environment, director B has a slightly different approach to hierarchy and knowledge exchange than his experimentalist colleagues. This is made clear to me immediately on

entering his office before any words are said: as the act of entering itself undermines one principle of hierarchy, common to every other department I had visited. Each director has an official 'gatekeeper', a female secretary whose position as intermediary is structured architecturally, by being situated in a room one must pass through to access the office of the director. However, director B has another door which leads directly onto the corridor. It is wide open and I wait outside, between both doors, uncertain as to which one will be the route of access. When he arrives, he shakes my hand and beckons me through the direct door, thus bypassing the resident gatekeeper. His alternative attitude becomes even clearer as we talk.

> 'In my department I see it rather as a spider-web, where there are many independent minds who communicate and come up with ideas through interaction...I rely on the Ph.D students. I try to instill ideas in their minds because I want to know the result. I'm building my image of how things work from all the results that the students produce. So if a student did not come up with an answer, then the piece of the puzzle in my mind, is not there. I am after the student because I want to know the answer'.

Using the metaphor of a 'spider-web' as a guiding principle for social relations is evocative. An image begins to appear in my mind as he speaks: of glistening silver threads, intersecting at many different nodes, in which all nodes and all threads are on the same two-dimensional plane. Suddenly, as the last sentence here is uttered, another figure looms into the image. The spider! A large, black, sleek and nimble beast which scuttles from node to node, following the vibrations which lead it instinctively to its prey. As he says, he is 'after the student because he wants to know the answer'. The director in this conceit *is* the spider, solving scientific riddles through the expanded surface-area of his web: in which whatever is caught can be carefully examined by him, and either discarded, or voraciously consumed with the help of more thread. Therefore it must be said at this point, that although a so-called 'flat hierarchy' constitutes this

director 's structural principle, he always remains above this; or rather, the web may be flat, but the spider is fully embodied.

Director C meanwhile runs a mathematics department, and his relation with his graduate students is even more tightly knit. It is not simply that he is 'after them' because he wants to solve a puzzle, but rather that if they work out something mathematically and lose their way, he must go through the entire process with them and locate where they went wrong. 'On the blackboard I ask them what did you try? And why didn't it work?'. The practice of going through a problem 'on the blackboard' is vastly different from the strategy and delegation of the experimentalist director, 'It's very close, and very hands-on'. The latter would spend much of his time organising large-scale experimental programmes, but the idea of him carrying out such experiments himself is, of course, laughable. 'I always say I have thirty-three desks', C tells me, 'which is huge for a mathematician'. The reason this is huge is because of the intellectual independence of every student, each one solving problems with a certain degree of autonomy. Because of such independence, the quality of the student is paramount. C tells me he would rather 'leave a gap' than hire someone who was not 'excellent', and thus in his case, during the hiring process, greater emphasis is placed on the curriculum vitae than it would be among experimentalists.

What is striking in this instance is the numerical specificity of his community, his insistence that he has 'thirty-three desks', where as other directors might suggest they maintain it 'around forty', or 'around sixty'. It is partly the nature of mathematical knowledge production, and the kinds of social relations it brings with it, that determine the number. The other part is an emphasis on quality over arbitrary quantity. It is important that the director, or one of his group leaders, is theoretically able to chart the intellectual location of every one of the students, literally solving equations 'on the blackboard', rather than swelling numbers for a bigger output. C is more than able to do this with the financial resources available to him, but as with others, he expresses that it is the highest number he can 'handle'.

Scale, for Sahlins and others, is one of the defining attributes of the big man complex (1963: 287). While the Polynesian chiefdoms which are Sahlins' comparators can encompass polities of tens of thousands of members, PNG Highland groups tend to oscillate between populations of only seventy to three hundred, often settling at the upper limit (Hogbin and Wedgwood 1953-4, Barnes 1962, Lepervanche 1967, Forge 1972). This is the quantity, apparently, which is most amenable to the 'maintenance of internal order' among the community (Hogbin and Wedgwood 1952/3: 242). Eric Schwimmer cites a study by T. R. Barker among the Ai'i, in which a Wawonga big man explains why he did not agree to the marriage of one the female members of his group. The reason he gives is accordingly, that 'he did not wish to increase the number of *siba* marriages indefinitely, but wanted there to be just sufficient to serve his commercial ends and those of his community' (1991: 151). This big man subordinates the potential for further expansion through affinal networks, to a functionalist attention to the perceived limit of the community's productive work and needs. Although the kinds of activities a Max Planck director is governing are ostensibly intellectual rather than economic, the big man and the director both share a concern not to stretch the level of social abstraction too far, at the risk of sacrificing the loyalties of their subordinates, and/or the quality of their productive output. Just as expansion is important in the early years, the willingness to assert limits is equally important once momentum is built.

vi) Responsibility and failure

The question of limits takes us into another facet of the hero principle: the great weight of responsibility, self-monitoring, and work which is the corollary of this ideology of autonomy. Having emphasised up until this point, the many echoes which resound between this heroic headship and other forms of leadership, I will now follow a different path: a path which explores the position existentially and takes us deeper into the cultural particularism of German social ontology.

The old adage that 'with great power comes great responsibility' is acutely experienced by these figureheads. Former president Hubert Markl, in a speech celebrating fifty years of the Max Planck Society, made the following remarks.

> 'Only someone who has never felt the challenge of the responsibility which weighs upon a scientist, can think that the scientists of the MPG have an easy existence. A life dedicated to science is certainly an enjoyable existence, but by no accounts is it an easy one'.[24]

This sentiment is echoed by several directors, often with reference to the 'pressure' of successful performance in the *Fachbeirat*.[25] One director tells me about the dangers of burn-out.

> 'One of the main qualities of a researcher is to know when I should continue and when I should stop. When you find a scientist with burnout it's probably because of this question. That's a nagging question that worries you all the time. People think that being a professor is an easy job, but its extremely stressful psychologically. And there is a strong danger of burn-out. What makes it so stressful is not the amount of work you have to do, but the uncertainty. If you are after a good question, there will be periods when you're desperate. You ask yourself – am I doing the right thing? Is it ever going to get better? You have to ask yourself – should I continue or should I stop? This is the most difficult question. I can fail in the end and then the advisory board a few years after the fact will say, "Hey, you've failed"'.

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24 'Nur wer niemals den Anspruch verspürt hat, den solche Verantwortung an einen Wissenschaftler steht, kann meinen, den Wissenschaftlern der MPG sei damit ein leichtes Dasein bereitet. Ein schönes Dasein ist sehr Wohl, ein Leben für die Wissenschaft, aber fürwahr kein leichtes' (Henning et al. 1998: 19).

25 Cf. Chapter 3.ii.

Nevertheless, even if the advisory board does say ‘Hey, you've failed’ – as we learned in Chapter 3.ii – this does not mean he will be given any strict instructions as to how to succeed. Instead, this determination – as this participant hints – comes from within. In this sense, the ‘freedom’ codified in the Statutes, is coterminous with that proposed by Johann Fichte. Fichte – like all of the Idealists – was very keen on the idea of freedom: calling the *Wissenschaftslehre* 'the first system of freedom' ever truly envisaged (1994: vii). For him this means intellectual freedom: the freedom of mind or consciousness. He argues for its primacy through his basic proposition that, 'The self begins by an absolute positing of its own existence' (Fichte 1970: 99). No objective reality is able to emerge, before the self becomes aware of itself as a self, before its mind is able to observe itself as being. However, this is not some ego-maniacal free-for-all. Rather, the self is very carefully circumscribed; the crucial point is that this circumscription takes place internally. There is, as Fichte says, 'an original duality in the self' (1970: 258). Alongside this 'absolute self' sits a 'not-self': an external, limiting element contained within the self a priori, that is, before its own self-positing. The presence of the ‘not-self’ – sensed through ‘feelings’ – governs its activity by means of an internal 'check', or '*Anstoß*’ (Peacock 2013). As Marina Bykova explains, 'This “check” or *Anstoß* is the original limitation of the I to its free, practical activity, but this limitation is posited by the I itself...by and through its own activity' (2010: 139). Thus the intellect acts freely in its practical engagements with the world (such as initiating a ten-year experimental programme) and it is limited not by the world which imposes external restrictions, but rather by its own internal mechanism, its own *Anstoß*. When this director tells me that 'one of the main qualities of a researcher is to know when I should continue and when I should stop' – rather than simply working hard, having ideas, being ambitious, or any other more predictable response – this is Fichtean freedom made manifest.

The great dyad directors posit between ‘freedom’ and ‘responsibility’ therefore necessitates a reimagining of what we understand as agency (presuming freedom-qua-agency). Rather than taking it is a universally distributed human potential, agency must be re-rooted within the cultural context to which it is being applied (Hilsdon 2007). In Germany, the concept of the inner

struggle has historically been a frequent reference-point: what Louis Dumont calls its 'schismatic introversion' (1994: 49), and Goethe's *Faust* names the 'zwei Seelen...in meiner Brust' [the two souls in my breast] (1872: 40). It is subtly dissimilar from the Cartesian cut between subject and object, instead it is a metaphysical cut within the subject itself, a dialectic not of, but 'within consciousness' (Ringer 1969: 93). The agency of the directors in the Max Planck Society comes to be, not only the decision to act and make a difference in the world (*sensu* Butler 1993, Giddens 1984), but the alternative decision to *withhold* from action – as this interlocutor says – to know when to 'stop'. The inheritance of a philosophy of freedom which empowers the directors to act in all the ways this chapter has so far identified is consequently a double-edged sword. It is partnered with an equal and opposite inheritance of intense self-governance.

The prospect of any form of limitation however, remains largely invisible to the rest of his department: for whom the ideology of the Harnack principle is internalised to such a degree that the director's scope for action is perceived as infinite. This may be the 'limitless resources' directors are apparently awarded by their patrons, or the 'complete freedom' they have in all matters, scientific and otherwise. A frequent axiom among senior scientists is that a director can do 'whatever he or she wants'. This is usually followed or preceded by a reference to their specific director: with the caveat that he *could* do whatever he wants, but chooses not to as his reign is one of benevolence. 'D could be a king if he wanted to. You do not feel it because he is very democratic, but in principle they could give the directorship to a person of thirty-five and give them money for the rest of their career'. One director is well aware of the circulation of exaggerated perceptions among his department, and is flatly dismissive of their claim to accuracy. He reaches for an analogy, 'In a feudalistic sense, this noble is seen by his people as a person of universal power. But the power is granted from outside and can be taken at' any time'. This is not strictly true – all acknowledge that in practical terms the removal of a director from his post would be almost unheard of – yet what he is trying to emphasise is some of the fragility internal to this position, which often goes unacknowledged.

What is visible however, is that in meeting their responsibilities (and fending off failure) the director is likely to be the hardest working member of any department. This social elite are not the 'leisure class' of Thorsten Veblen (1973), whose wealth enables them to remove themselves from the means of production and engage in 'conspicuous' time- and cash-rich pursuits. Nor are they the ritually immobilised kings of Africa or the Pacific, whose sacred position removes them from the daily affairs of temporal life (Quigley 2005: 2, Valeri 1985: 149). Instead, again co-extensive with the Fichtean *'ich'* – who comes to exist in the process of 'striving' (*streben*) – maximum status means maximum productivity. I have one particularly memorable encounter with this fact. In negotiating an interview with one director, he patiently explains that he has no available time in the foreseeable future, but is intrigued by my project, and has an 'extreme suggestion' for me. I could meet him off a plane at Tegel Airport, and we could conduct the interview in the pre-booked car which will take him to the Institute in Berlin. I agree with alacrity, and trundle down to Tegel with a home-made sign saying 'Anthropologist' scribbled in bold. The striking thing about this incident is not in fact that it happens at all, but that it happens twice in quick succession! As the vehicle begins to pull away the director receives a call from his secretary, and rather oddly, she asks to speak to me. (In the same flurry of emails in which I had communicated with this director, I had also written to one of his colleagues at the same Institute). She asks whether I would like to accompany this subsequent director, in another car *back* to Tegel Airport, as he would be happy to offer an interview in transit. So after a short tour of the Institute, I return to Tegel in yet more animated conversation, armed with a brief insight into the director's hyper-mobility and sardine-packed schedule. I discover soon after, meetings in taxis are not at all uncommon. One group leader in the Primary Institute tells me this is something he and his director regularly do, as it is often the only liberated time there is.

vii) <u>The collective individual</u>

In Chapter 1.iv I identified two variations of German holism: the first being 'the individual as totality which concentrates the whole world within

itself'. One self thereby encompasses an entire community (as illustrated in the diagram on page 31).[26] This holistic approach to persons and groups frames the director's relationship to his department in a particular way. Moreover, at different scales and to different ends, it also becomes a way of representing the whole organisation.

The rhetoric of the encompassing or collective individual, is used to describe the expansion or contraction of a department. As the department grows, so does 'he', as it shrinks, again the director shrinks too. One senior talks of his entry to the department as a Ph.D student when a director was on a recruitment drive, 'At that time, *he was growing well*. He was starting out, trying to get people'. Meanwhile, another director deliberates the pros and cons of the current size of his community, 'I always thought, maybe *I should become a bit smaller*, but I think it is about the right size from the point of view that I can manage it'. It should be noted that these linguistic habits trip off the tongue within a seamless string of words. They are communicated without irony or self-consciousness, but rather quite straightforwardly. The encompassment of a community by its director is not felt to undermine the community in question by placing them in a relationship of subordination, but simply becomes the language through which both are made present.

It should not be a surprise therefore that for the whole organisation, this collective individual becomes the president. The current incumbent Peter Gruss is a highly visible figure: his image perennially decorating the front pages of the plethora of print culture the Society produces, and his duties, biography, and political activities only one click away from the Max Planck homepage. The president's speeches throughout the history of the society, act and have acted as a mouthpiece for the position of the organisation relative to certain issues. They often confront the meta-issues of research, and are intended to have a rallying effect both within and outside the organisation. Consistent themes are the nature of research, the nature of the Max Planck Society, and perhaps most importantly,

26 This is similar to, but subtly distinct from, Alfred Gell's notion of 'distributed personhood' which is inspired partly by the big man systems of Melanesia (1998: 21). Distinct from, because distribution implies a philosophical pluralism, whereas within this German form, self and world both participate in the same basic unity.

why Germany needs it.[27] Just as the director *is* his department, the President *is* the whole Society. This can be illustrated with reference to one such speech of Prof. Adolf Butenandt, president from 1960 to 1972: 'The close cooperation of the Society with other scientific institutions is symbolized also by the fact that its President is a member of a great number of such institutions throughout the Federal Republic of Germany'. He then proceeds to list these institutions (1981: 278). Without hesitation he directly equates the institutional memberships of the president, to the extra-mural collaboration of the Society as a whole.

Likewise, the Society tends to demonstrate its scientific excellence first and foremost, not by offering an aggregate overview of its products, but by the remarkable success of a small number of Nobel Laureates. President Gruss in a recent speech marking the organisation's centenary, makes much the same assumption as Butenandt did more than three decades earlier, 'For those outside the Society, our Nobel Prize winners are of course particularly high profile. Their achievements are a symbol of the creativity at work in our Institutes'.[28] In this logic, the organisation is internationally recognized as being a creative place, because a tiny minority of its former and current members have been awarded the Nobel Prize: a mark of the ultimate original contribution to knowledge. These individual achievements are appropriated as a 'symbol' of the character of the whole Society.

Finally at the transhistorical scale, this collective individual is Max Planck himself. He in a sense, encompasses them all: transcending the arrivals and departures of directors, presidents, and Nobel Prize-winners. It is his face and aphorisms which adorn the Society's promotional literature, and whenever a new Institute is founded it is presented with a bronze bust of Max Planck on its inauguration.[29] This is usually then placed on a plinth in some public area of the

27 http://www.mpg.de/190649/News

28 http://www.mpg.de/1024203/KWG_MPG_en.pdf

29 This is if the Institute bears his name. There are other Institutes within the Society that bear other names – such as the Albert Einstein Institute – which possesses a mounted bust of Einstein instead.

building.[30] On this point it should be noted that associating an organisation with a pre-eminent German scientist is also characteristic of Germany's other major research facilities: Joseph von Fraunhofer and the Fraunhofer Society, Hermann von Helmholtz and the Helmholtz Association, and Gottfried Leibniz and the Leibniz Association, not to mention the Institutes of Albert Einstein and Fritz Haber, both of which fall under the banner of the MPG.[31]

The specific form that all of these various collective individuals take, tells us something further. It matters that these are all intellectual heroes, rather than heroes of any other sort. The German Idealists exported another important precept besides whole, self-governing subjects, which became particularly influential after the trauma of World War II: that the activity of the intellect is the highest realisation of human consciousness. As Fichte says, the world only exists as far as our skill in unveiling it, so these intellectuals became like shamans, crossing boundaries and exposing dimensions lesser mortals could not conceive of. As Dumont says, by subordinating the political to the cultural, these philosophers granted themselves enormous power. As 'mediators' of German consciousness they assumed a national significance which might elsewhere be occupied by those with some form of political office. They became 'representatives of their country' (Dumont 1986: 152), self-designated 'culture-bearers' (*Kulturträger*) (Boyer 2005: 56). The belief in intellectual heroism is still a potent force in Germany, and one from which the hero-principled structure of the MPG undoubtedly benefits.[32]

30 Sometimes however, he migrates. In one Institute, I stumble upon Max Planck's slightly grim countenance tucked away in a computer room full of garrulous Ph.D students, hiding under the leaves of a plant

31 This can be contrasted to the nomenclature of their possible equivalents in the UK: the *Royal* Society, and *Imperial* College London, both of which are sufficiently infused with monarchy and empire to betray something of the historical differences between the two countries.

32 This is in dramatic contrast to the societal negation of intellectuals Stefan Collini notes for the UK (2006).

viii) The individual collective

Before concluding this chapter, it is critical to note that a director is not only the leader of department, but a 'scientific member' of a 'private club'.[33] The horizontal relations *between* directors are consequently a very important part of their professional experience.[34] As one director explains,

> 'The directors are extremely important, it's a bit like a monk's order'.
> *In what sense?*
> 'As a community. Because we are not so many people. All in all it's like 270 directors, and a major university has far more professors. The common spirit is very strong, and we cooperate a lot. So when we fill a position in, let's say, Munich: people in Rostock, Cologne, Hamburg, Jena, Leipzig, would convene with external experts to fill that position. And in this respect, there is a very strong sense of community'.

A director is therefore not only a collective individual – a totality in themselves – but one participant in a wider individual collective – another totality. By 'individual' I mean that the directors understand their club as an unusual one; the contrast drawn here to the university system is but one among a sea of others.[35] I am always being told – for one reason or another – that the Max Planck Society is not 'representative' of German science more broadly. So together with this 'sense of community', is a sense of its identity as exceptional.

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33 Directors often refer to the Society as a 'club' – apparently without any fear of being seen as cosy and nepotistic. Clearly this is largely because it *is* a club (*Verein*) in the legal sense (cf. Chapter 2.i); but it is also because this kind of solidarity is not seen as shameful, as it might be elsewhere. However, this is a word scientists sometimes pick up on, referring to it rather sarcastically as an 'exclusive club'.

34 This was not something I was able to explore through observation. All of the following assertions and analyses, relate to directors' testimonies of how they themselves experience these relations.

35 Another contrast which appears frequently is with American science. I also hear contrasts with the UK, as well as the more 'applied' research organisations of Germany such as the Fraunhofer Society. Not once do the directors frame the Max Planck Society as *similar* to another organisation.

To picture this collective, a brief exposition of some of the Society's internal organs will be necessary. As well as being the member of a multiple-headed Institute, each director is also the member of a 'section'. There are three sections in total which are organised relative to their research focus: 'Biology and Medicine, 'Chemistry, Physics and Technology' and 'Humanities'. These sections are repeatedly socially reinforced through rituals: 'general meetings' which occur no less than three times a year. At these meetings, members will discuss prospective candidates for new directorships, proposals for new Institutes, and other 'matters of common interest'.[36] Although I did not explore these meetings ethnographically, one can imagine that as with all rituals they serve a galvanising function, re-making an imagined community into a real one each time they coalesce.

Yet directors are not ghettoised in the sections. One of the purported reasons for the 'success' of the MPG, is 'the commitment of scientific members to think…in the interest of the Society as a whole'.[37] While the sections are important, there is a simultaneous effort 'not to take these structures too seriously'. They do not have specific budgets, and the founding of a new Institute always involves the whole community. One recent initiative is the establishment of a new Institute of Empirical Aesthetics: bringing together scholars in literature, musicology, and neuroscience to name a few suggested disciplines. In order to 'start thinking about people' – who to bring on as its founding directors – a range of directors from across the sections met for a two-day symposium, together with celebrated artists and musicians for a 'brainstorming' session. The results of this were then reported back to the sections and the president. Directors are thus continually encouraged to think beyond their disciplines and sections when carving new fields of knowledge and bringing in new colleagues to do so.

For those who arrive from other countries, the unusual 'collegiality' of the social environment in which they find themselves, is acknowledged with an enormous feeling of warmth and gratitude.

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36 http://www.mpg.de/288798/Governing_Bodies

37 http://www.mpg.de/39586/MPG_Introduction?page=3

> ‘Even before I got to the Max Planck I went to a meeting, a scientific conference at which there were a number of directors, of Chemists whom I didn't know.[38] They came up to me and invited me to have dinner with them. They said how pleased they were that I was coming, that we were going to open up this Institute of Chemical Biology. Now up until that point in country X, Chemists would have slit my throat, I was taking money away from their favourite projects. I was used to having to fight. I was on friendly terms with a number of them, and they knew that the science was good, but they just hated losing the money. It pits you against each other all the time. But with the Max Planck since the first time I arrived, they were very welcoming, and I knew that we were going to have collaborators, and its that collegial kind of atmosphere which comes from the different way that the decisions are made and the money is allocated, and the security people have about their Institutes. So the Max Planck can go into an international project, and you can count on all the directors to be your allies’.

There is a pathos to this citation, the mourning of good social relations ('I was on friendly terms with a number of them'), which become helplessly transmuted into bad by a scrabble for resources. The sheer relief at the 'collegial kind of atmosphere' within the Society is vivid, the obvious comfort taken in commensality and a sense of belonging, which funding structures at his former university precluded. The alternative social landscape which is his comparator is also couched in at times very violent terminology, the most dramatic of which being his suggestion that in the past such scientists would be ready to 'slit his throat', evoking a positively medieval image of brutal murder in a battle to the death. But it is not the only one, combative imagery abounds. He was 'used to having to fight', and was 'pit(ted) against' other scientists, while his fellow

38 The names of disciplines and Institutes have been changed to maintain anonymity.

directors now feel like his 'allies'.[39] In fact, this kind of rhetoric is uttered frequently among my interlocutors: not least by the director at the opening of this chapter, who sees this community as a demilitarised modern warrior cult.[40]

The language of violence and war strikes an interesting juxtaposition to the religious and particularly biblical language whose use I have also noted throughout the chapter. In the world of their imagination, as well as being war-like, these directors are also God-like. It recalls the image of the early medieval warrior-king: spear in hand, and with the moral righteousness of God's plan behind them. This monk's order, these weaponless heroes, act together – as the Harnack principle explicitly states – to 'transform and advance the *cause* of science'.[41]

ix) Conclusion

In this chapter I have explored the personhood of the director as a social form. Although this form is differentially expressed ('every department is different'), each director is an instantiation of the same hero principle: one level in the tripartite logic of the Max Planck hierarchy.[42] Within the Institutes, this principle accords them the authority to govern their communities charismatically: deciding who and how many scientists to bring on as members, how the admittance process should work, the forging of healthy internal social relations, as well as ensuring those relations will facilitate the work necessary to answer the scientific questions they are trying to pursue. Directors exhibit substantial creativity in all of these respective choices, managing their department like an

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39 The phrase 'to pit against' first appeared in the mid-eighteenth century, with reference to the 'pits' in which cock-fights and dog-fights took place for gambling and amusement.

40 This suggests that Donna Haraway's critique of Latour's intensive use of military metaphors is misplaced (1997: 34). Rather than a machismo etic conceit, Latour's propensity towards military metaphor should in fact be understood as an emic intervention (Latour and Woolgar 1979: 232); the reason being that scientists themselves often reach for warlike imagery when describing the kinds of social struggles they engage in.

41 Cf. Chapter 1.iv.

42 Like Marshall Sahlins' depiction of big men tribes, local cultural differences do not negate the existence of a homologous source of power, 'The indicative quality of big man authority is everywhere the same: it is *personal* power' (1963: 289).

intentional community. Like charisma, in these matters, they appear to know only 'inner determination and inner restraint' (Weber 1948: 246) ('I don't have to ask anybody, or to justify it'). Such displays of charismatic authority – and even of charisma itself – are some of the ways in which the ideology of the Harnack principle becomes a social and material reality.

The Harnack principle and the agency it offers them, arises from a particular German vision of the heroic intellectual self. My argument in this respect is analogous to Dorinne Kondo's study of a Japanese company (1990). According to Kondo, the company's employees 'craft themselves' from within the discourses of Japanese selfhood: one which is fundamentally relational and defined through complex webs of obligation. In forging such relational and reciprocal identities Kondo's participants can exhibit a profound and ongoing creativity. It is – on the other hand – emphatically distinct from Caitlin Zaloom's analysis of Anglo-American financiers (2006), who appear to occupy the cultural flatland Latour is so convinced of. In conducting 'practical experiments' (ibid: 164) on a daily basis, which are 'never binding and rarely durable' (ibid), they in fact perform the ideology of liberal self-fashioning – just as Kondo's Japanese employees perform the ideology of social obligation. Yet Zaloom does not reach this kind of meta-analysis, as Kondo does. Instead of framing their activity as the performance of a particular Anglo-American liberal self, it *becomes her own analysis*. It is this kind of disentanglement I am referring to, when describing the entrapment of organisational anthropologists 'in an ideological cell the walls which they cannot see'. Agency is always a second-hand gift, awarded to certain persons for certain historically-constituted reasons. To represent the actions of agents as primary, is to fall for one of the great myths of European modernity.

The agency of the directors thus has a specifically German dual character: as one says, they occupy a 'strange and hybrid position'. They are both collective individuals – mavericks and visionaries who encompass their communities totally – as well as being members of a rigorously policed 'private club', an individual collective. As the latter, they are perennially pushed to work 'harder on their hunting skills', to succeed in the *Fachbeirat* and be viewed as 'good hunters'. Agency is thus inextricably tied to *Verantwortung*, the 'responsibility'

to take a risk which will pay off in the long-run: a responsibility born of their membership in a broader community. In the following chapter I will now turn to the personhoods of technical staff. How are the technicians similarly formed by what Saba Mahmood calls ‘historically contingent discursive traditions’ (2005: 32)? Among this stratum, the relevant questions circulate not so much around the agency which emerges from within the hierarchy, but the status.

5. The Longevity Principle: Technicians

> *'The scientist says, "I need this like so and like so", and he's thinking thinking thinking and i'm doing doing doing, and then he says it's wonderful'*
>
> Workshop technician

If the directors and the Harnack principle that spawned them receive the highest volume of air-time in the Society's public discourse, it is fair to say that the technicians receive the least. As the Max Planck website says quite candidly, 'They operate in the background' of the organisation.[1] The binary hierarchical ideology of leader and led reified in the Harnack prinicple, therefore fails to differentiate between those who are led: scientists below the director and technicians. It is this under-theorisation that the following two chapters confront: the primary difference between them that I posit being one of rhythm. While scientists come and go inside the organisation at breakneck speed, a technician could potentially spend their whole working life within the same Institute, beginning as a trainee (*Azubi*) and moving into a permanent position. I introduce the 'longevity principle' in an effort to capture the vastly different kind of relationship to the organisation technicians enjoy as a result of such a long-term commitment. The substantive purpose of the chapter then – like the previous – is to solve the enigma of technical personhood. On meeting them I strain my ears to the sounds of distant echoes, of a way of being rooted in Germany's medieval past. While scientists are among the familiar cosmopolitan neophiles conjured by late modernism, technicians seem to carry the secrets of forgotten centuries, which whisper quietly in their thoughts and gestures.

One of my primary concerns is the comparatively elevated social status of technicians in the hierarchy.[2] As the workman tells us above, his ability to produce a bespoke experimental device garners a great deal of scientific respect

1 http://www.mpg.de/279304/Services

2 See diagram on page 43.

('he says it's wonderful'). To address this, it makes sense to begin with Dumont and the distinction he famously drew between status and power. In his study of the Hindu caste system, Dumont maintains that spiritual power or status – based on the hierarchy of relative 'purity' – is both separate from and superordinate to, temporal power, which he calls 'the monopoly of legitimate force' (1980: 153) – principally oriented around rights to land ownership. Thus the Brahmans or priests, the highest spiritual caste, encompasses the Kshatriyas or warriors hierarchically, the caste from which Kings are drawn, because worldly power is of less value than religious status.[3] Status for Dumont always has its roots in religious precepts, which is why I appeal to the cosmology of Martin Luther throughout the chapter, to seek the basis of these scientists' awe.

Accepting Dumont's thesis in this regard transports me into a particular position vis-à-vis my interlocutors. Other organisational theorists, particularly those in Science Studies who offer their own ethnographic accounts of technical workers (Latour and Woolgar 1979, Law 1994, Shapin 1989), do not acknowledge this distinction.[4] The result of this is effectively an analytical collapse of status into power, and the emplacement of those who respond to instructions at the bottom rung of a political ranking. This collapse and its consequences also erupts in organisational studies second-hand through the application of Foucauldian theory (Born 1995, Law 1994). The far-reaching influence of Foucault's vision of a 'microphysics of power' (1977): a power which is universal and inescapable, lent weight to the assumption that it was political relations which forged social ontologies rather than anything else. The workman with whom we began is implicitly telling us that in the MPG this is not the case, that status and power are two separate quantities. Technicians have indubitably less power than the scientists: the chain of command is clear ('the scientist says "I need this like so and so"'); yet this does not deny them status ('and then he says it's wonderful').

3 The fact that his distinction has been so 'widely berated' (Parry 1998: 151) is yet more evidence of the pathologies that surround Dumont, as it is in fact one which has been similarly documented by others, in other ethnographic contexts (White and Lindstrom 1997).

4 Although see Pearce (2011) for a possible turning tide.

As I begin beneath, another main concern of the chapter is the fundamental difference of the technicians. This is one which emanates from within the hierarchy: in which its various groups serve a different function in the operation of the whole. The function of the Max Planck Society's several thousand technical staff, is in a basic sense to ensure that directors and their scientific teams are provisioned with all the material resources necessary to carry out their experimental programmes. While lab technicians purchase and maintain the strictly regulated material cultures of laboratories through which the universality of scientific knowledge is controlled, workshop technicians often produce one-off pieces for a specific purpose.[5] Their function is thus dominantly practical rather intellectual (although can involve a high level of technical expertise). As this workman puts it rather nicely, their work is oriented around 'doing' rather than 'thinking'. Anthropologically, this different function leads to different kinds of persons being constituted. As sections iv – vii show, technicians have profoundly different experiences of time, of space, of what constitutes knowledge, and of attachment, to those of their scientific colleagues. This kind of personhood has its origins in Luther's notion of the *Beruf* (vocation or literally 'calling') which endowed practical work with a spiritual significance and a set of relationships. However as Weber famously told us (2001), it was not Luther's *Beruf* but its Calvinist equivalent which came to define the cosmology of labour during the rise of industrial capitalism. These technicians are therefore different – not only from Max Planck scientists – but also from their counterparts in other Western organisations.

i) *Bildung* and *Beruf*

All of the material in this chapter is suspended in the theme of *difference*, the basic incommensurability of scientific and technical employees. It is important to state from the outset that this is not simply an etic category, but a word scientists themselves reach for when describing technical workers. One scientist says of the men in the workshop,

5 See Figure 9.

> 'They have different interpersonal abilities. When you consider the language barrier and the cultural barrier, it's not so straightforward. They also have different manual abilities'.

He is conveying a great deal of information here from which we can advance analytically. The first is that these repetitive references to 'they' indicate the particular difference of a group rather than the universal difference of individuals. As Dumont says – not incidentally following Hegel – the difference between Hindu castes comes from hierarchy and its 'differentiation of functions' (1980: 42), and cannot be understood independently of this.[6] The difference of technicians likewise arises from their differential social function within the organisation's totality. This is a stark contrast to the difference born of egalitarian ideology: a universally distributed human potential with no need for totalities (Haraway 1997, Deleuze 2001), indeed a basic fact of life itself (Tarde 1999).[7] Secondly, this difference is clearly not a superficial one, but deeply rooted in those acquired substances out of which human expression is formed: language, culture, even the skills sedimented into the body itself. It is a difference which is internal and indeed total, one which reaches into the very depths of being. Such ontological differences will structure the later sections of the chapter. Finally, there is a desire here, to overcome these differences. As Espeland and Stevens tell us (1998), what makes commensuration so powerful is its ability to collapse the distance between people, to make them legible to each other, to facilitate the longing for human closeness. The very fact that interaction is 'not so straightforward' demonstrates this very distance, this incommensurability. In short – as the thesis as a whole proposes – these are not personhoods forged through the interactions of individuals, but which precede them, and which have to somehow be coped with or transcended in the very process of that interaction.

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6 See Appadurai (1988) for a critique of Dumont's use of Hegel.

7 Of course the great irony of the universalization of difference is the logical corollary of universal sameness, each entity participating in the shared condition of difference. At its heart again we encounter this abstract individual, as Ernst Troeltsch railed in 1923, 'the barren abstraction of a universal and equal humanity' (Ringer 1969: 100).

As the section title suggests, these profound differences of function and social being have a history: a history which can be traced through the tropes of *Bildung* and *Beruf* – self-cultivation and vocation – which have shaped German education and group formation since the early nineteenth-century.[8] As the Idealist notion of *Bildung* was in itself 'a secular recasting of calling' (La Vopa 1988: 249), we shall begin with Martin Luther's definition of the *Beruf* – the first appearance of the term in its contemporary usage – and proceed from there on.[9]

Luther's understanding of the calling across his oeuvre is a wide and complex one (cf. Wingren 1957 for a full elaboration), so I shall limit its scope here to a few key features. His most radical proposition is that God's grace is not achieved through the 'ascetic withdrawal' (Weber 2001: 40) of the cloistered Catholic monk, but the 'this-worldly work' (ibid) of peoples of every rank and function going about their affairs. Luther's ethics is thus a profoundly concrete and mundane one: 'sanctification' becomes 'hidden in offensively ordinary tasks' (Wingren 1957: 73). In performing these ordinary tasks – without complaint or hesitation one should add, but in full willingness and love – the true believer should orient themselves towards the service of their fellow beings. 'It is the neighbour who stands at the centre of Luther's ethics', Wingren says (ibid: 43), as Luther makes the link between faith in God and the willingness to assist them. The proper answering of God's call therefore requires the subordination the self to the 'socially defined common welfare' (La Vopa 1988: 192). Here we come to the crux, or some might say, the paradox of the *Beruf*. Despite being called individually by God to perform spiritually-invested tasks which they should willingly carry out, every citizen has an external '*Stand*' (location) or '*Amt*' (office) which is similarly 'a direct manifestation of Divine Will' (Weber 2001: 43). Acceptance of, or indeed 'resignation' (ibid: 44) to one's social location and function, is thus another important avenue for expressing religious

8 On the Max Planck website the binary distinction between scientists and technicians is represented in the hypertext: 'science' and 'services' http://www.mpg.de/working_at_a_max_planck_institute.

9 There are explicit anthropological reasons for the smuggling of Lutheran precepts into *Bildung*. Most of the German Idealists who formulated the philosophy had some direct exposure to Lutheranism. Herder was an ordained Lutheran pastor, Schelling's father the same, Hegel an orthodox member of the Prussian Lutheran church. Even Fichte, despite overtly rejecting his conventional Lutheran upbringing, simply 'reformulated Lutheran themes' in his secular works (La Vopa 2001: 13).

devotion.[10] It is this paradox inherent in the *Beruf*, that as La Vopa says, enables it by the eighteenth-century to 'sanction self-determination without relaxing an overriding insistence on collective imperatives' (1988: 14). Further references will be made throughout the chapter to Luther's concept of the calling, so now we shall turn to its secular offspring, *Bildung*.

The new ideology of *Bildung*, grew out of, and indeed to some extent resolved this paradox inherent in the *Beruf*.[11] Developed by the German Idealists in the late eighteenth, early nineteenth-century, this ethic did not prescribe submission to one's *Stand* and the duties accompanying it, but active encouragement of a constant process of 'becoming' (Boyer 2005: 58). A far cry from the previous central tenets of Luther's vocation: namely 'merit, service, duty and usefulness' (La Vopa 1988: 264), this philosophy maintained the 'absolute "individuality"' and 'unique particularity' (ibid) of every personality. It therefore paved the way for the 'autonomous self-realization' (ibid: 278) that Luther and his followers would have despised, and legitimated the possibility for social advancement through education. It is hardly surprising therefore, that as the nineteenth-century progressed, *Bildung* – a cultivation only achieved through the passage points of the new German *Gymnasia* (elite secondary schools) and the universities – became the ultimate 'badge of membership' (ibid: 249) for Germany's expanding educated middle-class.

It should now be fairly clear why I am animating a historical distinction between *Bildung* and *Beruf* in a chapter concerned with Max Planck Society technicians. These two terms became the conceptual crucible for Germany's two-tier education system (Greinert 2007): *Bildung*, an academic education undertaken by the middle and upper class and *Beruf*, a vocational system of craft-based training for the manual working-class, modelled on the old medieval

10 Luther becomes even more concerned with the social stasis inherent in the calling after the peasant uprisings of 1524-5.

11 In the sense that the human will which is spontaneously animated in being called to God's work, does not have to inhibit itself in an equal and opposite submission to social immobility. I say to some extent, because *BIldung* was inextricably linked to tropes of national selfhood such as *Volk* and *Kultur* which encourage the same submission to the 'socially defined common welfare'. Yet it still provided much more space for individuality and self-realization than its antecedent.

guild system. Technicians are quick to correct me when I ask what precise qualification it is that they studied for (*'Was haben Sie studiert?'). 'Ich habe nicht studiert, ich habe gelernt'*, they reply (I did not study, I learned*)*. This semantic distinction, between 'studying' and 'learning' is a product of a prevailing educational dualism. While a minority of children pass through the *Gymnasia* and take the *Abitur* (the only route to university), two-thirds of young people attend a *Hauptschule* (secondary modern), *Realschule* (intermediate school), or a *Gesamtschule* (comprehensive) and undergo a three-and-a-half year *Ausbildung* (training course) leading to a vocational qualification. This bifurcation begins around the age of ten (Führ 1997). German society at large is thus unusually hierarchical, i.e. organised around a principle of the differentiation of functions, in the broader institutional context in which research facilities like the Max Planck are embedded.

Before moving on, there are a few things to mention about the development of Germany's vocational education system, as it has consequences for the meaning and treatment of technicians in the MPG. The last quarter of the nineteenth-century was characterised by significant social unrest in the new German Empire. Universal manhood suffrage and the development of mass production had inaugurated a new 'age of the masses' (Greinert 1994: 23), which presented the old Bourgeoisie with an increasingly powerful social adversary in the form an expanding labouring class. The first proto-vocational schools in fact were invented to plug the gap between the end of elementary schooling and the start of military service, a gap which these masses might otherwise fill with political involvement in new socialist revolutionary movements. These so-called 'further training schools' – which included an intensive programme of political education – became compulsory for all male commercial apprentices after 1891, and female after 1900 (Greinert 1994). It was these institutions, conceived as a means to contain the social 'threat' (ibid: 31) to bourgeois society through the inculcation of bourgeois values, that in 1899 became the first formal vocational schools. Such beginnings go a long way to explaining why Germany's venerated vocational system has survived so consistently into the following centuries. Their purpose was never a purely utilitarian one – creating a labour pool to meet industrial requirements – but fundamentally about the making of placid and

productive German citizens.[12] It might be tempting to see this in purely Marxian terms, a typical case of domination by a ruling, academically educated, class. This is certainly one aspect, yet the association between vocation and citizenship has also served a prophylactic function, buffering this group against economic change. For instance during the slump of 1976, the Federal Republic passed a law committing itself to quotas of training places, in order to prevent a spike in youth unemployment (Führ 1997: 146). The technicians of the MPG are accorded a similar kind of protection. The policy of the MPG as regards the closures of Institutes is to do 'everything in its power' to move those technical staff with permanent positions into another Institute.[13] This is very different to the scientists, the majority of whom would be forced to look for positions elsewhere without help.

Methodologically, the difference of the technicians fundamentally structures my engagement with them, presenting a not insignificant challenge. On a return visit to one of the Institutes I attempt to organise some research with several laboratory workers. I write to the resident gatekeepers, querying whether it might be possible to shadow them as they go about their routines. This proves to be a surprisingly tricky issue and leads to the redacted email exchange below.

> Dear Vita,
> With this 'shadowing' of technicians, I am not sure whether this is a good idea. I am afraid that the technicians could feel controlled. They are 'doing their job' and they have probably the least understanding of your work. In any case, it has to be voluntarily, and I would suggest that I talk to the technicians first. I would really like to give them the option of saying no, or that they define the terms.

12 This is exactly the kind of logic we see rolled out in Britain today. At a recent conference Alison Wolf argued that it was no use creating more apprenticeships, as 'Training doesn't create innovation or growth', (cited in Elwes 2012: 50). The lives and skills of young workers are subordinated to an abstract economic rationality, 'growth'. It is growth that counts, not the making of British citizens.

13 *'alles zu unternehmen'*

The director of the department is then brought into this conversation, and his response echoes that of his colleague, Johann.

> Dear Vita,
> Your plan to accompany technicians (rather than scientists) might need some discussion and probably careful preparation. Technicians might get the impression that they are being controlled, if not asked and informed properly. I discussed this with Johann and he is going to talk to the technicians you want to follow beforehand. I certainly want them to agree to the procedure. I hope this is not a problem for you.

So much delicacy and care reverberates in these inscriptions. From both parties there is the distinct sense that this is a complex proposition that must be very sensitively negotiated. It is by no means a simple matter of exerting authority, and obliging the technical workers to engage with me and my project.[14] They should willingly participate: in both excerpts, the voluntary nature of their involvement is the *sine qua non* of this proposition being realized. Connected to this, there is clear concern about 'control'. If the technicians are not given the explicit opportunity to agree, the boundaries of their autonomy will be transgressed, leading to potentially negative and anxious feelings on their part. In brief the complexities raised by my suggestion are never truly resolved, and for this reason the ethnography in which technicians feature is less dense than that of their scientific colleagues. As a result references to scientific ontologies will erupt as contrasts throughout the chapter, through which the understanding of technicians will be refracted and enriched.

I shall end this section on a note of contradiction. Although I follow Greinert (2007) in positing a historical dichotomy between *Bildung* and *Beruf* , which stands for the bifurcation of the German education system in the 19th century and after, these two terms and the ideas they contain still significantly

14 Not that I would have desired this under any circumstances, but it could have been the manner in which my query was appropriated.

interpenetrate. After all, one is a recasting of the other. Technicians will naturally describe their work not as their *Arbeit* (job), but as their *Beruf ('Es ist mein Beruf'* they say, with a palpable satisfaction). However, we know from Weber that science is also a *'Beruf'* – in the sense of 'profession' (1992), and that when a director is appointed he is *'berufen'*, called to the position. Meanwhile the vocational training qualification contains *Bildung* within its own sign (*Ausbildung*). *Bildung* is the general German word for education, and the philosophy of self-cultivation and uniqueness similarly shapes how young trainees are taught, and how those so trained and cultivated conceptualise their knowledge. Thus although, as the most of the chapter argues, the framing of technical personhood is dominated by central tenets of Luther's *Beruf* concept, it should be kept in mind that there are elements of the Idealists *Bildung* which also shape these persons. One is the importance of autonomy just shown, while others are their individuality and unique particularity of their knowledge, a particularity wrought by inner transformation.

ii) Status and the *Beruf*

The expansive multi-disciplinary area known collectively as 'Science Studies' has had an odd relationship to technicians. As late as 1989, Steven Shapin noted that 'in the now vast academic literature in the history and sociology of science there still does not exist a single study systematically documenting and interpreting technicians' work, past or present' (1989: 556). Presumably this is because scholars have fallen for scientists' own narratives about their significance in the production of knowledge, and the peripheral relationship played by physical practices (and therefore those most associated with them). Aside from a generalized neglect, where technicians do appear in this literature, the statements about them can emit that recognisable effluvia of universality and ethnocentricity, characterised by the set of (unacknowledged) Anglo-American biases with which I introduced the thesis.[15]

15 Cf. Chapter 1.iii.

These biases begin with the assumption of commensurability, which leads to subsequent assumptions about hierarchy and personhood. For Bruno Latour, who carried out his ethnographic study at the Salk Institute, California, technicians and scientists are variations on the same kind of person (Latour and Woolgar 1979). Not only do technicians appear to value themselves using the same metrics as scientists, i.e. one oriented around intellectual flair ('I don't have the ability to get a Ph.D...to do research you need imagination, originality... I cannot reach that level' (ibid: 218)), but there is also significant overlap between technical and scientific careers. Latour notes that while he was carrying out his research, five young technicians left their positions to pursue doctoral study, while several other 'super-techs' (higher-ranked technicians) were in fact Ph.D holders, with names appearing on scientific papers. The corollary of commensurability means that subjects can be ranked in a linear hierarchy along a single axis: in this case the axis dictated by scientific value-ideas of intellectual knowledge and skill. This is then the line taken by John Law, who carried out his ethnographic work in the UK. He refers to the technician or 'crew' world as the 'low-status end' of the laboratory (1994: 122), has a sense of their 'frustration' at being so positioned (ibid), and relates how they 'resented the Physicists' as a consequence (ibid: 125). This brings him to the overarching conclusion that, 'In the modes of ordering performed by the Physicists, the room for initiative left for the crew is very small...That is in the "nature of technicians"...They rank less' (ibid: 123-4), quite clearly spelling out that these individuals are subordinates in a linear hierarchy. The only way for technical workers to move up this axis and achieve status, is therefore becoming more scientist-like. According to Steven Shapin, technical work is accorded value in those laboratories where the line 'between technicians and scientists, is blurred' (1989: 562).

All of the above-mentioned works are based on historical or ethnographic work in the Anglo-American world, thus it is quite natural – indeed imperative – that they should reveal a set of Anglo-American assumptions about social organisation and ontology. However, the cultural location of the objects in such studies goes without anything more than a cursory comment; and more often than not, empirically-based arguments segue into speculative statements on the experiences of technicians in science globally. Even Steven Shapin, whose

article was intended as a politically and analytically trenchant critique of the ‘invisibility’ (1989: 563) of technicians in the science studies literature, tends towards this. He says that the work of technicians, ‘is the sort of work that both seventeenth-century and present-day scientists tend to regard as of no importance to the production of knowledge’ (ibid: 557).

Max Planck Society technicians continually presented me with a nagging cultural conundrum, as their position could never be reconciled within this paradigm. Indeed, the following testimonies from the lips of scientists directly contradict all of the previous arguments about value and status.

> 'Technicians are really important. Especially when you think about samples preparation. When you want to do something really new, they have prepared a lot of different samples along the course of their career and they can combine different techniques that you might not know. Things you've never problematized before, and you don't know the tricks'.

> 'Mr Panovsky is a wonderful guy. He does some of the samples testing for me and is a real wizard on all the machines.'

> 'I'm sort of going back and forth in terms of how much I want to rely on (the technicians) because they're much better at what they do than I am. But at the same time I want to learn some of it. So they help me with the embedding, then I do the sectioning and polishing. They're incredible, those two in particular, I mean everyone here is incredible. But they're insanely good. And patient'.

The use of language such as 'tricks', ‘wizard’, ‘wonderful’, ‘incredible’ and 'insanely good' insinuates that the technicians possess a knowledge which is awe-

inspiring and out of one's grasp, indeed almost magical in its enigmatic spiritual potency. I do not think it is incidental that some of these words have their roots in expressing the omnipotence of a Christian God (wonderful, incredible).[16] It is a far cry from the perceptions of inadequacy, frustration, and resentment, habitually attached to technicians like those above. I shall confront this 'nagging cultural conundrum' by returning to Luther.

Not only did the *Beruf* ennoble this-worldly work, but Luther's schema infers the moral equality of each and every one. As Weber says, 'It and it alone is the will of God, and hence every legitimate calling was of exactly the same worth in the sight of God' (2001: 81). To perform one's vocation is to carry out God's work, to be touched by God's grace: this is why I read the use of formerly biblical imagery to describe technicians as non-incidental; it is a marker of the residual grace which remains in the performance of a *Beruf*. Now to argue for the equality of the technical staff in a system I am claiming is profoundly hierarchical may seem contradictory. However, it is a common mistake to assume that hierarchy and equality preclude each other. In fact the opposite is true, in the most stable hierarchies they often interpenetrate.[17] Indeed Luther's conception of the *Beruf* contains this interpenetration, as already noted. All callings were valued equally, yet this only true when they were the assigned tasks in a given social order. One's *Stand* was fixed within a hierarchy, yet one's *Beruf* was as equally close to God as every other.

iii) Workshops and laboratories

Having set the historical and cosmological scene for the curious position Max Planck technicians occupy, and how this differs from other social studies of science, it is now the moment to wade deeper into their ethnographic realities. To initiate this immersion I will present a 'sketch' of one workshop, and two

16 Both appear in the King James Version of the bible.

17 David Graeber argues that 'something inherent in the nature of hierarchy... always tends to create images of equality as a kind of side-effect' (2007: 283).

'characterizations' of laboratory workers (Emerson et al. 2011: 69-77), which will remain largely underdetermined by analysis.[18] All of the employees in the workshop are male, and it is an architectonically-bounded space which operates autonomously from directorial leadership.[19] Meanwhile both lab workers are female, and work in and among the scientists in the departments, under the auspices of a specific director; although like the workmen, they are employed by the Institute rather than by him. As such, there are slight differences in association, spatial movement, and identity which characterize these two groups. Nonetheless they are substantially more similar than they are different, all falling under the banner of '*Techniker*', technicians. It is this nomenclatural collapse I will use most of the time for ease of analysis. It should be noted that these descriptions are intended to index other workshops, other workers. Thus, while they are not ethnographic composites drawn from a variety of instances, they still serve the function of standing for.

The workshop is a large, airy, generously-proportioned space, approximately ten metres in width and twenty-five in length. It is a little like factory floor, populated with a number of large-scale machines and their attendants placed at even intervals, its soundscape saturated with the gentle thrum of machinery, and the occasional loud clang of metal meeting metal. Except the ambience escapes the agitated claustrophobia of a factory; its easy, inhabited feel is in fact its antithesis. The whole space is bathed in natural daylight which enters through the large skylights in its very tall ceiling, and the air is cool and fresh as the door leading directly outside is often left open. The operators work patiently and methodically, sometimes clustering spontaneously into small groups, punctuating the thrum with a murmur of male voices and laughter, solving problems or sharing jokes. An old fifties-style radio is propped

18 The authors in their fieldnotes guide, define a 'sketch' as a 'static snapshot', in which the fieldworker 'describes a scene through particularly detailed imagery (2011: 75). It is intended to offer a sense of ambience and context without the onward march of an episodic or dialogic narrative. Another genre of writing is the 'characterization'. This is the technique of describing an individual in their daily activities, or painting a portrait of some sort, all with the intention of 'presenting characters as fully social beings' rather than just a mouthpiece of relevant utterances (ibid: 69).

19 See Figure 10.

up on top of one of the machines, providing an unobtrusive soundtrack of contemporary pop music.

I will offer a virtual tour of the space to give this sensual picture more specificity. Walking through this workshop then, from the back of the hall which leads outside, to the front, which is attached to their other buildings of the Institute, there is a large German flag hanging down on the right-hand side. Above the exiting door is an analogue clock, with another identical clock facing it at the opposite end of the room. There is a central aisle flanked on either side by machines around a metre and a half in width and length, all decked out in a uniform cool leaf-green coloured metal, behind which sit shelves and storage-space backed against the walls on either sides, containing their instruction manuals and whole concrete catalogues of various material appendages.

Many of the machines are highly aesthetic feats of mechanical design, purchased in the 1960s and 1970s, and still perfectly operational. Roughly half of them have small computer screens attached, and are called 'computer numerical control', or CNC machines, through which the user can change the settings with which to cut the metal into a desired shape, automating many actions which would have previously been manual. It seems that this genre will ultimately phase out their mechanical counterparts. The disadvantage of this is that, as the workshop manager *(Werkstattmeister)* mourns, while those machines from the 60s and 70s will continue working with the required maintenance, because CNC machines require specific computational programming they must be replaced every ten years. He relates this with some scorn, taking pride in the fact that when mechanics come to repair their older versions they always comment, 'Oh it's so nice that you have such old machines'.

Every workspace *(Arbeitsplatz)* has between one and three machines, and more importantly a sole proprietor. The latter is expected not only to use them, but also to care for them, tidying away metal shavings at the end of the day, and making sure all of its working parts are well watered and oiled. Of course *being* a proprietor often makes one *proprietorial,* and these spaces often have a very 'homey' feel to them, revealed through their material culture. Here the realm of

the personal makes itself felt. There is clearly continuity between the personal and the professional in some senses, as these practical metal-working men often affix pictures of helicopters and motorcycles. The latter in particular are fairly ubiquitous, one operator has a small model perched on top of his machine ('a gift from my mother') while another has restored a vintage motorbike to its former glory, and it sits proudly next to his machines. It is also quite clearly 'a male domain', *('eine Männerdomäne')*, as a workman once remarked, and these workplaces often display another kind of 'interest' quite apart from these feats of engineering. Images of erotic female models posing in calendars or perched suggestively on motorbikes, index too the testoteronic heterosexual masculinity of the workshop. Quite apart from the clocks overhead, every workplace also exhibits a substantial degree of what Nancy Munn via Malinowski calls 'time-reckoning' (1992: 102): the various practical techniques through which time is counted, measured and periodized according to some collectively defined standard (in this case clock-time). Each one has a yearly planner, sometimes with every day so far meticulously crossed off, as well as illustrated calendars and small circular clocks of their own. It is quite visibly an intensely 'reckoned' space, not only by the time-keeper, the workshop manager, and the permanent fixtures of the hall, but also very actively and keenly by the workers themselves.

Towards the front of the hall sit the inexperienced trainees (*auszubildene*, sometimes termed in the diminutive as '*Azubis*'): young men of sixteen to eighteen years, working through their three and a half year training programme (*Ausbildung*) using smaller equipment. While completing their practical training here to be an industrial mechanic (*Industriemekaniker),* they must return to their technical college every couple of weeks to complete the written element of their course. One of these affable, shy boys shows me the project he is currently working on: a model tractor-truck (*Sattelschlepper*). To construct this he must consult certain textbooks, one of these dates from 1976, with another from 1982. It is quite plausible that young men have sat here producing model tractor-trucks for the last thirty years. At the very front, attached then, to the rest of the Institute, is the office of the workshop manager*,* a relatively small room sheltered by a glass door (although this only seems to close during meetings), containing a desk, computer, and several chairs. The workshop manager is often on hand to

answer questions from the trainees and supervise their progress. However, the onus is on them to work through the projects themselves, learning predominantly with the help of manuals and the dialectics of trial and error.

Frau Steiner is in her late 60s. She is small and sleight, with short grey hair and eyes which peer with patient attentiveness through moon-shaped spectacles, but with a certain toughness and a clear sense of ownership over the space she takes up. Steiner has been working in the Institute for over forty years, and as a consequence has a strong sense of its own historicity, telling me with confidence the dates of both its foundation, as well as when it 'changed over' to the Max Planck (it is one of a minority of Institutes which was formerly part of the KWG).[20] Her job is to prepare samples for the scientists who will then carry out mechanical tests on them, and she attempts to describe this process to me with another appeal to history. 'Here (in the Institute) we're trying to identify the point at which one can use as little material as possible, but have the same mechanical effect – our forefathers, some 400 years ago, had no idea about these kind of things'. Another technician whom she is instructing sits beside us as we talk, and at this point intervenes eagerly, 'Yes, if you were the village smith, you would make knives that had a certain function but you wouldn't know *why* it worked. We want to know why'. Thus although Frau Steiner (or her colleague for that matter) would be unable to relate the chemical composition of the materials she is working on, describing them extremely vaguely as 'alloys' or 'nikkel composites', she has a broad sense of their ultimate purpose. Her contrast to a medieval pre-scientific ignorance, with the highly technologized activities the scientists are engaged in, is one which betrays a pride in historical progress, at the same time as expressing a certain commonality and continuity with '*our* forefathers', medieval Europeans.

Having prepared metal samples for so many years, she emphasises the '*Erfahrungswert*' (which can be loosely translated as the 'value of experience') of the profession which grows incrementally over the course of one's working life. For her, this *Erfahrungswert* can only be transmitted between people in a limited

20 Scientists on the other hand will often be unaware the MPG was even built in the shell of a predecessor.

way, by and large it is gained independently through the repetition of practices. 'There are certain definite things people can tell you, but most things you simply have to experience yourself. There is no way I can store up the experience of other people'. *Erfahrungswert* for her is 'nothing other than learning from your mistakes. It's like a child burning it's finger, it hurts, and then it doesn't do it again'.

Her work takes place in two laboratories on the ground floor of the Institute. One is bright with large windows and is designated for samples preparation, and the other just across the hallway, for experiments, has no windows and is small, dark and cave-like. It is dominated by a large instrument on which the samples will ultimately be tested. The large part of Frau Steiner's work involves moving methodically between these two rooms, and more specifically, three dominant pieces of equipment inside them. The principal one is a computer-operated device to cut the material to the desired thickness, on which she carefully inputs parameters before running a scan and looking at the graph it has produced. She knows what the 'ideal image' of the graph should look like (i.e. the ideal thickness) – quickly sketching it for me on the piece of paper beside her – and is trying to approximate that as best she can. At a certain point she decides that the graph is a reasonable one, and removes the sample to the light microscope further along the bench, taking some time to look its surface carefully to make sure there are no 'artefacts' which would hamper an experiment. She then transports this tiny morsel of metal to the large instrument in the room next door, placing it in a sample holder which is then inserted into the machine. Finally, a picture of white dots, only a few nanometres long according to the scale bar, appears on the screen. This is the surface of the metal. She concludes matter of factly at this point, that 'This is what a doctoral student would like to see, so my work here is finished'.

Anna is in her early 30s, the same age as many of the scientists she works with, and has been employed by the department for only three years. She attended a *Gesamtschule* (a comprehensive): a school without the entrance requirements of the other schools in Germany's tiered education system, and was always interested in science-based subjects, but it was never clear when she was

a teenager which direction she would go in. The only thing she was certain of was that on leaving school at sixteen she wanted to 'learn' *(lernen)* (i.e. complete a practical training course) rather than 'study' *(studieren)* (i.e. complete the *Abitur,* Germany's equivalent of A-levels which is then a route to university). At the time she was open to any kind of practical training.

> 'I applied to lots of other things, to be a nurse, a carer, whatever else. I was also thinking of studying to be a vet...I applied to lots of positions. But I was too young to be a nurse, and I was too skinny to be a carer – because you have to really be able to manage people physically – then the Lab Technician position just worked out. Everything that interested me I applied to, then you wait and see what you get'.

After her three-and-a-half year training course, she worked in various limited contract *(befristet)* positions in companies, before ending up in the industrial research institute next door. It was there that she found out about the position she now holds through a local advertisement, 'the receptionist just left it on my desk!', she says, clearly gratified. She communicates with clear satisfaction that her current position is permanent and so she plans to stay as long as she can. Thus when the department is dissolved she will simply be transferred to another one, just like many of her current colleagues who have arrived from elsewhere.

Anna grew up in a suburb on the outskirts of Berlin, then was schooled and trained not far away, in two other areas around the city. She has only ever lived in Germany, but does not seem embarrassed about this, simply rather relieved, ('Luckily I was never forced to go away'). German is her native language, and she has some familiarity with English, although she concedes it is 'not so good'. When she is speaking to the scientists it will thus mostly be in German (unless they are visibly struggling), as being non-natives most of them want to learn German and she is happy to provide them with practice. 'Us technicians are really part of the German-learning process, we've made it part of our job! There are several of us who try to talk German with the scientists, even

if its only very slowly, and to use words which they will understand, and if they don't understand, to try another word.'

Her contact with scientists is largely instructional. She is 'responsible' for two machines, and usually has appointments in the morning with those who would like to use them. They will convene around 10am beside the machine, and discuss in detail what the scientist wishes to do with it. These are sometimes 'guests' (visiting researchers) but mostly other members of the department. She describes the interaction,

> 'The first two or three times, when they're new, I'm always with them, and only when I notice that they can work well without questions, doubts or even...you know..*fear*, then I let them work alone. I also often just sit beside them, and tell them what they should be doing, so that they can learn to handle the technical stuff themselves. When someone sits beside you and explains it makes it a little easier for you, as opposed to showing them once that you should click here and do this and do this. Then they're like, what was that again?! So I sit beside them, and say to them where they should click, what they have to pay attention to, so they can do it by themselves'.

She is emphatic about how much she enjoys the work, because although she is always working with the same two instruments, it always involves meeting new people, and encountering new problems which different kinds of samples present. She has fixed diurnal rhythms, but within that there is the opportunity for flux, based upon other scientists and their wishes, as well as the technical task at hand. She makes a point of trying to explain why the work is satisfying for her, 'You *see something'* (her paused intonation emphasises this) 'You see what you've done and you see what's come out. And when it works it's even better. In industry you're always doing the same thing. I know people who only look at blood, or only look down microscopes. I think research is always surprising,

something new is always turning up. When one project is finished, another comes along'.

Several of the themes raised in these portraits will be taken up in later sections. Nevertheless, there is one glaring point which cannot pass by now without comment: namely, the sexual division of labour. Game and Pringle in their study of 'sex-typing' (1984: 19) – the ascription of some work as 'men's' and other work as 'women's' in the industrialised world – identify several key dichotomies. Three of them in particular would be familiar to the technical world: that men's work is habitually 'heavy', 'dangerous' and 'dirty', while women's work is 'light', 'safe' and 'clean' (ibid: 29-30). They also note the association of large machines with masculinity, which may be the subtext to the claim that the workshop is '*eine Männerdomäne'*. Meanwhile, Alvesson and Billing chart the historical associations of femininity in organisations, with those roles oriented around nurturance and care (1997). This is very vivid in Anna's testimony, when she explains that her task is not simply to impart technical expertise, but to manage the scientists' doubts and fears so they have the confidence to work without her. Her case is one example of the 'emotional labour' (Guy and Newman 2004) women often take on in organisations. Finally, the spatial differences between these two groups also have a gendered dimension: the association of women with domesticity and men with public life. The material separation of the workshops gives the workmen greater autonomy from the majority-male directors, while female lab technicians slot very easily into the quasi-households of the departments in which the director is the head (like a modern patriarchy).[21] One scientist makes this link outright when he likens one elderly technician to 'our mother in a lot of respects'.

21 The autonomous relationship the workmen have to the directors is made clear to me during one conversation with two of them. They explain that if they want to take a holiday they need one of the directors to sign off their sheet. When I ask why it is this director rather than another, one answers *'Keine Ahnung. Einfach so. Schnick schnack schnock'* ('No idea. It's just like that. Paper scissors stone'). He has very little interest in giving the directors' processes of decision-making any cognitive space, 'paper scissors stone' being an idiom of arbirtrariness. It betrays an unwillingness to engage in what David Graeber calls 'interpretive labour' (2009: 516): the work it takes to imagine what the world looks like from another's point of view. As we'll see again in Chapter 6.iv, hierarchy does not just delimit people but also their willingness to cogitate on certain matters.

iv) Time

As posited by my 'principles': differential time-consciousness is the primary way in which the difference between scientists and technicians manifests itself. This is one which is predominantly framed by their varying contractual relationships to the organisation: between the *befristete* (limited) contracts of the bulk of scientists, and the *unbefristete* (unlimited) working contracts of almost all technicians. This legal foundation has a range of ontological consequences for how they experience temporality in general. It can be represented by the following set of binaries, some of which have already been shown in the previous section, while others will be developed below.

Technician	Scientist
Long-term	Short-term
Early	Late
Gerontocratic	Youth-dominated
Fixed hours	24-hours
Patience	Urgency
Historical	Neophilic

The most obvious rhythmic difference is diurnal. Men from the workshop will arrive as early as 7am, while female laboratory technicians may arrive slightly later, at 7.30 or 8am in the morning. This has consequences in the afternoon, as by around 3 – 4pm most technicians are getting ready to leave. As one scientist puts it, 'The German people arrive early and leave early'. Scientists, on the other hand, arrive much later in the morning, regularly as late as 10am, but are also more likely to stay later, particularly if they are adhering to a deadline. One Ph.D student stayed at the Institute until 4am carrying out experiments, as they needed to be concluded quickly, while I hear rumours of scientists sometimes working all night at the Institute, because they enjoy the 'peace'.

Weekly rhythms are also different. None of my technical interlocutors would usually be expected to come in on the weekend; indeed on Friday they often leave at lunchtime to begin their '*Feierabend'* – literally, 'party-evening' – the period of leisure-time after work, much cherished in Germany.[22] The Institutes meanwhile are open to scientists twenty-four hours a day, seven days a week. Experimentalists, particularly those working on cell-cultures, might be obliged to come in at the weekend to maintain these activities, which for the latter involves 'feeding' the cells at precise intervals. Of course scientists do not have to come into the Institute to work at the weekend. Some will use the time to write papers at home, as they feel better able to concentrate without the distractions of their colleagues.

Yet this difference extends beyond days and weeks, to the course of their working lives over many years, and the meanings ascribed to youth and age within this. The world of the technical workers resembles a gerontocratic society: one in which social status rises proportionately with age. This is clear from the diminutive description of the young trainees as *'Azubis'*, coupled with their gaucheness in the social space of the workshop; while their elders who have been working metals for twenty or thirty years are distinctly more relaxed, often with a playful twinkle in their eye marking their contextual confidence. This gerontocracy is bound up with ideas of material and technical expertise. It is very different from the young mathematician who has peaked by their mid-twenties. Technical skill is accumulated in a very linear fashion, beginning with several years of training, and ending at the height of one's experience and dexterity. As Frau Steiner says, this is the '*Erfahrungswert*': a self-cultivated knowledge which is accrued over decades with no downward tendency.

Unlike the scientists, technicians maintain a strict division between labour and leisure, thus their working hours as an aggregate amount, are 'reckoned' intensively. This is made very clear to me on entering the office of

22 See a recent Guardian article, which emphasises the importance of Germany's 'Protestant leisure ethic' to the country's social and economic well-being, http://www.guardian.co.uk/commentisfree/2012/mar/18/germany-protestant-leisure-ethic-british-admire. The importance of leisure for German workers in general goes strangely unacknowledged in popular stereotypes of 'Germanness': oriented as they are around hard work and efficiency.

the *Werkstattmeister*. Its walls are veritably wallpapered in temporal representations. When I ask him to expand on them he takes up the task with alacrity, visibly relaxing into descriptions of the means by which the temporal order is reigned. One of these is a table with the months of the year down the y-axis, and three headings at the top along the x-axis which read '*Öffentlicher Dienst*' (public service), '*Stahl/Eisen*' (steel/iron), and '*Beamte*' (civil servant': the three different contracts in the Institute which oblige the holder to work either thirty-six or thirty-nine hours a week. At the intersection of these two indexes are a series of numbers running into the hundreds: the total number of hours which must be performed by individuals under these contracts in each month. This is not a strict upper limit however; there is also the opportunity to 'put extra hours in your account' by working overtime, through which one is awarded a '*Gleitag*', literally a 'flexible day' (i.e. a day off). On the other side of the wall there is another table, with the surnames of all the workmen along the x-axis, with columns along the y-axis indicating months of the year. There are four different colour codings, 'holiday', 'illness', 'free' and '*Gleitag*', each of which is a different reason for absenteeism from the workshop. On this table there is a mark all of the days in which the worker is present in the workshop. One of the main reasons for this is to make sure that those with the same formal functionalities ('cutter', 'miller', 'turner' etc) are not absent on the same day, slowing up the process of production.

At first reading it would appear quite straightforward that these workmen are governed and controlled through the 'time-discipline' famously exposited by E. P. Thompson (1967). In his analysis of the rise of industrial capitalism in Europe after 1650, labour became increasingly ordered through the marking of time with clocks, bells, whistles, time-sheets, wristwatches and other devices, rather than the seasonal 'task-orientation' which had preceded it. Temporal unfolding was therefore reified into units which were themselves commodities, and could be accumulated and abstracted into purchasing power. (The idea of putting 'extra hours in your account' is an apt illustration). As time – through wage-labour – became the ultimate language in which labour was valued, it then also became a site of political struggle between 'time-keepers' and those who were kept: the former ascribing a certain value to labour, and the latter using

temporal resistance such as strikes to dispute this. The *Werkstattmeister's* recording of time in the workshop, then simply becomes another iteration of the use of temporal control to extract surplus value from labour within capitalist modes of production.

Yet to follow this extractive argument would be to misread the technicians' attitudes towards and experiences of their work. Although the time accorded to labour and leisure is strictly delineated, during the working day their time is oriented solely around whatever task is at hand. Thus when I ask lab technicians to fill in time-maps of their days, in the best case, they ignore these elicitation devices completely, in the worst, they become irritated that I have somehow missed the point. This 'point' is that the productive unfolding of their day is always situated *within* a social relationship, and thereby contains that unpredictable element inherent in any social exchange. For the lab technicians this might be saying that they simply work 'as people come along' (*'wie Leute kommen'*) and for the workmen, whatever 'workpiece' (an item they must produce so that an experiment can take place) has come their way. In one case, a lab worker and a guest scientist are working together with the instrument the former is 'responsible' for. They are having some difficulty slicing the sample in the correct way, and the guest apologizes for using up the lab worker's time so inefficiently. The latter responds with a phlegmatic shrug, 'it's *your time*, we can use it as you like' (my emphasis).

The importance of working *'wie Leute kommen'* or according to a 'workpiece' rather than the hours of the clock, exhibits an attitude towards time maintained in Luther's *Beruf*. He uses the word *'Stündelein'* – variously translated as 'the time' or 'the hour' (Wingren 1957: 213-234) – to indicate the temporal context of action in the performance of vocation. *Stündelein* is the liberation of action from any external time measure. The time which work takes is designated by God: so any planning for the future, or instrumentality about the use of time during work, becomes meaningless. 'When the hour has come' action 'breaks forth in an unpredictable way' (ibid: 213). The concept of *Stündelein* is also closely bound up with Luther's ideas about autonomy. As Wingren says, in Luther's schema 'the bondage of all actions to time is a death blow to the

freedom of the will' (ibid: 216). Performing one's *Beruf* according to the time it takes, rather than one decided in advance, thus becomes an important expression of human freedom. This is why technicians can get irritated that I have missed the point when I ask them which part of the day is allotted to what task. Their liberation from assiduous time-planning during work hours is in fact an important expression of personal sovereignty. As one tells me, *'Es kommt alles wie es kommt, dann man reagiert'* (Everything happens as it happens and then you react) adding as an afterthought, *'Und ich bin froh darüber'* (And I'm happy about that). Yet again the *Stündelein* contains that Lutheran paradox of autonomy and subordination. As the vocation is directed perennially towards the service of one's neighbour, it is in practice the needs of others that define the manner in which 'the hour' is used. Technicians do not tell me they use their time as *they* would wish to, but as others require: *wie Leute kommen*.

v) Space

In striking contrast to the cosmopolitanism and hyper-mobility of the scientific class, technicians have a consciousness of space I would call chthonic.[23] It is more than simply 'local', identity claims to which emerge more often than not in tension with national or supra-national forces; it is rather an ontology which makes no apologies for being intensely rooted within the respective Institute and its surrounding environs. This rootedness expresses itself through language, education, print culture, and often upbringing, as well as the objects which mark space, the material culture of offices and laboratories, which – like the director's multifarious forms of institutional embodiment – index the permanence of the technical contract. From the perspective of the organisation it is expressed most clearly through their job title: each technician occupies a designated *Arbeitsplatz*, literally working-*place.* Just like Foucault's description of the spatial practices of the 'disciplinary society': 'each individual has his own place; and each place its individual' (1977: 143).[24]

23 Cf. Chapter 6.i.

24 Again I am playing devil's advocate here, part of my larger argument is that the technicians inhabit a world subtly distinct from that described by Foucault.

Like Anna, technical workers are almost universally native Germans, with German as their mother tongue. They are also likely to spend the majority of their working lives speaking their native language. If scientists are really struggling, or from the Far East, they will muddle away in English, but they do not require anywhere near the level of fluency that a scientist would. For the workmen, English is even less necessary. Some, indeed, are taking on the project of language learning simply to amuse and improve themselves, but would rarely require it for their work. There is also a visible generational difference in linguistic abilities. As Anna is young, her English is fairly good. Yet the older technicians are much less likely to be conversant in English. For Frau Steiner for instance, it is an entirely different matter. Bar one exception in the workshop, a Sri-Lankan who is in every way an outlier, none of my technical interlocutors know any more than these two languages.

This chthonic personhood almost always extends to upbringing as well. Technicians have often been raised in the *Land* where the Institute is based. When I question one on this pattern she responds with a smiling shrug, 'Well, it could just be because we come from the region, and so I think, it's just easy to stay here, so-to-speak'. They seem to exhibit no signs of what Germans call *fernweh*, the longing for distance, an adventurous curiosity which often characterises globe-trotting scientists, ('it's just easy to stay here'). As a consequence, they are more likely to make fine-grained distinctions between much smaller geographic distances, while global consciousness for the scientific class always comes (and perhaps is cognitively necessary) at the expense of local specificities. To give one example, in the Primary Institute, many scientists choose to live in Berlin and commute to the periphery where the Institute is based, conceiving it as simply a particularly distant extension of it. On the other hand, technicians will make impassioned distinctions between 'Potsdam' (the town nearest the Institute) and the capital of Berlin. When one laboratory worker explains that before coming to the Institute she was trained in a local school of applied science (*Fachhochschule)* I take it from this that she is a 'Berliner'. 'No!' she responds vigorously, 'a Potsdamer. There is a big difference!' Instead of living in the cosmopolitan centre and commuting, technicians will also reside much nearer to the Institute, in Potsdam or elsewhere.

Dumont charts the close relationship between commensality and caste in Hindu hierarchy, in which one's meal partners are almost always of the same caste (1980: 137-141), and it is one which has many echoes in the technical world of the Max Planck. This is particularly vivid in one department in the Primary Institute. Female laboratory workers all take their Tupperware lunches collectively, in the bright glass-walled coffee room of the third floor.[25] They cite this as an important time to relax and pool the problems of the day on a model of generalized reciprocity, in which any of the others might know the answer to a particularly perplexing scientific problem presented by one. Meanwhile, the scientists almost always buy their lunches at one of the canteens. There is an in-house Max Planck canteen with a range of foods, a large proportion of which tends towards the quintessentially Germanic: with a range of Wursts, salty stews, and mash, which one can access from the department without going outside. However, many of the scientists will take the eight-minute walk across the science park to another canteen, to indulge in its more pricey, but also more exotic range of curries, risottos and spaghettis. The men from the workshop, the janitorial staff with their royal blue overalls, and the administrators, all frequent the Max Planck canteen in various sub-groups, and while some female lab workers may occasionally take their lunch with the scientists, it would be uncommon if not unheard of, that a workman would do so. If one were to unfurl the symbolic significance of these lunch rituals, quite apart from being instances of hierarchical segregation, the ingestion of certain foodstuffs is also a statement on spatiality and cultural consciousness. Cosmopolitan scientists will quite happily travel, leaving the confines of the Institute for a range of non-German foods, while the technicians remain fixed within the Institute, and consume the traditional foods that they are likely to have been raised on.

Spatial consciousness also reveals itself through the 'imagined communities' of the printed word (Anderson 1991). While the three-floor library in the Primary Institute is full of scientific journals, old texts, and a small cluster of novels in English and German – designated for its scientific patrons – there is a space upstairs, with several tables and comfortable chairs, which displays the

25 Indeed, this coffee room is both three storeys up and adjacent to the director's office, another spatial indication of the status of the technicians.

local newspapers of the region, such as the *'Märkische Allgemeine: Zeitung für das Land Brandenburg'* and the *'Potsdamer Neuste Nachrichten'*.[26] This is frequented by the permanent staff, who use it to take a short break between bouts of work. The consumption of local media is also often how workmen and technicians originally found their way to the Institute, seeing their subsequent position advertised in the job sections of the newspapers. Apart from that it may have been an opportunistic tip-off from a local contact, or even both, such as Anna's experience of having a receptionist put the local advertisement on her desk.

The most visible way in which technicians indicate their rootedness within the institution is through the material culture of their desks and laboratories. In Germany, where greenery of all kinds in public domains tends to be larger, and generally more ubiquitous than my instinctive comparator, the UK, this materialization often finds its form in potted plants.[27] Very occasionally a scientist may decide to flex their green fingers and acquire a plant to decorate their workspace, but largely this cohort has a functionalist attitude to the natural world (at least when they are at work).[28] The technicians on the other hand, particularly female laboratory workers, are likely to decorate large parts of their workspaces with a multitude of flora, often several different pots with stems and leaves reaching up towards the ceiling or hanging lazily down to the floor. Sometimes these items are the direct consequence of, rather than having a symbolic relationship to, the longevity of their positions. One lab worker points to the different plants surrounding the microscope she operates, and explains that many of them were left behind for her as presents from departed scientists. Sheerly by virtue of being present in the Institute for over three decades, she has accumulated several. More often than not, the care of plants throughout the

26 By contrast, scientists will often pool erudite books among themselves: one particularly popular example of which is Richard Holmes' *Age of Wonder* (2008).

27 The other individual who is embodied through indoor flora is the director. In nearly every directorial office I visit, there is a very large potted plant, or indeed a tree standing to human height. Often this arrives on the department's inception. For one, he explains his shrub is a 'sign of persistence', and he 'grew it from a single branch', being reflexive enough to see the shrub as a symbolic extension of his own department's growth.

28 At my goodbye party in one department, I present the group with a small potted plant. On asking one biologist who researches plants how one should care for it, he is aghast. 'I'm not a gardener!', he exclaims indignantly. 'Maybe I could tear off one of the leaves and test its mechanical properties!'

Institutes also falls to the technicians. In one case a group leader reports that one of the lab workers even came back from holiday early to water the plants: 'It's quite dedicated', he says, awed and a bit bewildered.

Aside from plants, such workspaces often display all the other accoutrements which may a space 'homey': boxes of herbal teas, arrays of mugs, small toy animals, photographs of families and friends, birthday cards, even items which would usually belong at home, such as hand creams, sportswear and changes of clothes. Meanwhile the homey accoutrements of the workshops have already been described. By contrast, scientists are often unlikely to have anything other than a few paper articles or conference posters scattered around, some weighty textbooks, and the usual office stationery.

For Grant McCracken, 'homeyness' becomes an analytic category through which the to articulate the symbolic properties of particular environments (2005). He arrives at his argument from research in North-American households, but it could just as easily figure here in these professional spaces.[29] A space made 'homey' is recognisable by – among others – its 'diminutive', 'variable', 'mnemonic' and 'informal' characteristics (ibid: 28-36): all of which could be used to describe the material cultures which saturate these *Arbeitsplätzen* in workshops and laboratories. The most interesting point McCracken makes about this phenomenon for our purposes here is its relationship to status. He argues that 'homeyness' is used as a 'status corrector' (ibid: 41). 'Homeyness allows the individual to defend against status strategies. It allows for the containment, management, and repudiation of these strategies' (ibid). If technicians were truly subordinate, they would deploy these strategies in the privacy and safety of their domestic environments. However, the fact that they deliberately give their professional spaces a decidedly homey feel, is a visible repudiation of potential scientific status strategies. It situates them as belonging in a firm and lasting way inside the Institutes, environments in which they often appear more visibly at ease than their transient scientific colleagues.

29 Indeed the collapse of the public/private distinction in these examples which McCracken in his study polices, also communicates the technicians' attachments which are the subject of the final section.

To conclude this section, a reference was made at the beginning to Foucault's 'disciplinary society' (1977), and I will now take this up again. For Foucault, the control of subjects through architectural encompassment from the eighteenth-century onwards was the primary means through which bodies were 'disciplined' and thus rendered useful for whatever political end. By enclosing people in functional sites (workshops, factories, military training grounds) they became objective nodes in an overarching '"anatomy" of power'. This 'anatomy' overwhelmed the specificity of particular selves, and conceived of human beings as little more than productive occupants of the spaces which enclosed them, and – particularly in workshops and factories – prosthetic extensions of the machines which dominated them.[30] However, analogous to the appropriation of the temporal logics of 'time-discipline' without the attendant exploitation, technicians are organised by means of 'enclosure' without their humanity being reduced to serving the designated purposes of these spaces. The MPG does not conceive of its technical staff as object-like nodes in its political 'anatomy', rather the specificity of individual selves *transcends* their spatial enclosure. The material culture of 'homeyness' is one example of a manifest eruption of the personality into the professional domains of the *Arbeitsplätzen.* Another is the impetus placed on embodied knowledge. Like Frau Steiner, whose working life involves moving between two rooms, it is not these rooms which define her but rather the *Erfahrungswert*, the hard-earned value of her own technical skill.

Although they appear superficially similar, the reason that technicians have a slightly different experience from Foucault's subject, brings us back once more to the cosmological basis of their *Beruf*. As Weber argued, it is *not* in Luther's, but Calvin's conception of the calling that forms the foundations of the so-called capitalist 'spirit' we are well familiar with. Indeed Luther's statements, would be considered 'from a capitalist viewpoint, definitely backward' (Weber 2001: 81). The Calvinist impulse, rather than being concerned with questions of 'meaning and of life' through worldly engagement – as Luther had been – was to 'tear the individual away from the close ties with which he is bound to this world' and force them to confront an 'unprecedented inner loneliness' (ibid: 60). There

30 Much like the predicament of the coal miners in Émile Zola's *Germinal* (1993).

was also not the sense – as with Luther – that all callings were equally valid paths to salvation. Only a minority, the elect, were blessed with 'eternal grace' (ibid: 59-60), while the rest were 'damned' and conceived of as a lesser form of humanity. The consequence of this is that one cannot simply apply Marxist-inspired scholarship, i.e. one resting on a theory of capitalism – whether E. P. Thompson's time-discipline or Foucault's disciplinary society – uncritically to the technicians' experience. The cosmological roots of their *Beruf* lie in Lutheranism rather than Calvinism, making them subtly distinct from manual workers under capitalism.

vi) Knowledge

Technicians are not as cerebrally-oriented, nor verbally or mathematically analytical, as their scientific colleagues, but rather are individuals who have spent their lives since at least the age of sixteen, working in practical domains and learning how to navigate such tasks by praxis. Thus although much has been made of scientists' prosthetic relationships to their instruments (Traweek 1988, Gusterson 1996), compared to the technicians the latter remain very much in their heads. Instead, technical workers use their whole gamut of conscious senses to carry out their work, but also too forms of sensing which are unconscious. Frau Steiner's description of *Erfahrungswert*, is emblematic of a wider emphasis on '*Gefühl*' (feeling), which is sometimes invoked to verbalise how their activity is guided. In the MPG, feeling is not necessarily subordinated to thinking, as it might be in many others.[31]

Interestingly, as we've learnt, theirs is not a form of knowledge which the scientists rank upon, but which can inspire wonder and awe. The reason for this brings us back to Luther's most defining proposition, that God is placated through 'this-worldly work' of a concrete kind. In his *Sermon on the Mount* Luther tells the audience,

31 One of the explanations of the Harnack Principle (cf. Chapter 1.v) is after all that directors, 'rely on their own intuition'.

> ‘If you are a craftsman you will find the bible placed in your workshop, in your hands, in your heart; it teaches and preaches how you ought to teach your neighbour. Only look at your tools, your needle, your thimble, your beer barrel, your articles of trade, your scales, your measures, and you will find this saying written on them’ (cited in Wingren 1957: 72).

The work of the craftsperson thus becomes a spiritual activity, even a form of religious worship (‘you will find the bible placed in your workshop’). This ennoblement of material engagements gets carried through to some extent by the Idealists, and then subsequently bound up with good citizenship in Germany’s vocational schools.[32] The end result is that manual craft is something the technicians take enormously seriously, cultivating their sensual dexterity in the performance of their *Beruf* without embarrassment or shame.

Laboratories and workshops are very sensually rich spaces. Their soundscapes are thickened through a succession of beeps, clicks, whirrs, and the perennial sound of *cutting*, the material expression of the intervention of experimental science in the messy entanglements of the cosmos (Barad 2007). One workman shows me how he works his machine, a 'miller' which removes the thick scaly black layer formed by the metal-casting process, and renders the surface shiny and smooth. While the machine is whizzing away, he leans in to the device, subtly tilting his head sideways with an absent gaze of non-visual concentration, 'You do a lot with your ears' he explains. He beckons me closer and despite the loud background noise we both hear a quiet ticking sound, of the surface being scraped off the metal at just the right number of revolutions per second. This is not a numerical judgement, but rather a 'feeling' for the correct rhythm of the ticks which prior work has given him.

32 As Humboldt says in the *Limits of State Action*, ‘All peasants and craftsmen might be elevated into artists; that is, men who love their labour for its own sake, improve it by their own plastic genius and inventive skill, and thereby cultivate their intellect, ennoble their character, and exalt and refine their pleasures’ (1969: 27).

At the same time, although the centrality of vision in scientific expertise has been well-documented (Daston and Galison 2007), those laboratory technicians preparing samples are likely to spend more time using their eyes as tools than their scientific colleagues: like Frau Steiner's perambulation from ascertaining the 'ideal' image on the graph, to checking there are no 'artefacts' on the surface of the sample. Often when technicians are working with scientists in a pedagogic mode, like Anna's description of training neophytes, it is only they who are able to 'see' the difference between the sample and the embedding material. Scientists, at first, will have no idea what they are looking at. Thus as with all technical work, although 'there is a (scientific) level beyond which I cannot go' – as one technician related – the experienced use of vision is a critical part of the technicians' skill.

It also surely goes without saying that all technical work which involves the transformation of materials is extraordinarily tactile. Scientists often describe samples preparation as 'boring' and a part of their work which is a 'necessary evil', complaining that it is arduous and difficult to keep their hands steady. For scientists, the conceptual rupture between the work of the head and of the hand, makes the obligations of the latter feel tediously painstaking.[33] Meanwhile the technicians require no such flexibility and indeed often relate how much they enjoy these activities. When I briefly attempt to cut a fibrous material under the microscope, armed with a very fine and sharp scalpel, I am struck by how awkwardly unfamiliar the process feels, and how any slight movement in my hands is multiply magnified through the lens (and its image incidentally, an inverted version of the practical reality). It brings home how much embodied skill such delicate work requires, necessitating, as Schaffer et al. put it, an extraordinarily 'mindful hand' (2007).

In short there is a great deal of technical consciousness bound up in the body: not only in mindful hands, but also mindful ears and mindful eyes. In all probability a mindful smell may also be significant, although this is never

33 Schaffer et al. trace the origins of this rupture to the Aristotelian distinction between 'episteme' and 'techne' (knowledge and its practical application), subsequently taken up and reified by Francis Bacon during the 'birth of modern science' (2007: xiii).

manifested to me. One of the difficulties of my ethnographic encounter with the technicians is their largely non-verbal relationship to their work; yet in hindsight this is an utterly logical eventuality, as non-verbal skill is very much the basis of their professional personhood. Over and over again, the word *'Erfahrung'* (experience) turns up as a catch-all term: to express the peculiarly embodied form of knowledge which technicians acquire over the years.

What is fascinating is how enormously scientific work at the Max Planck Society *relies* on this ineffable, unconscious domain of 'experience' to carry out its various costly and high-profile experimental programmes. This is a very different world from the initiative-constrained crew of John Law's British lab. One experiment I follow particularly closely, involves many weeks of sample preparation and sample holder construction, culminating in a two-week slot at the local 'synchrotron radiation device', a very expensive operation which must be booked many months, if not over a year in advance.[34] The material in question which is being explored is a very sensitive one, and must be prepared and encased in exactly the right way if the experiment is going to generate readable data. The weeks before the experiment are punctuated by group meetings, in which it becomes clear that this preparation hinges on the embodied skill of one sole technician in the department. It is repeatedly stated that she has a 'special technique' and 'special knowledge' in preparing these kinds of samples, and so it is paramount that she has enough time before the start date to do so. The group leader in charge meets the technician in question multiple times to make sure she understands the desired thickness and texture they are looking for in the samples, i.e. what kind of data they wish to draw from it. Likewise, the sample holder, a 'chamber' in which the material will be positioned and protected inside the synchrotron, is produced over the course of many weeks by one member of the workshop, from designing the object on the computer, to cutting and assembling its respective parts with the help of the on-site machinery.

34 This instrument is a enormous circular device housed in a building the size of several tennis courts. Its usage is anthropologically analogous to Sharon Traweek's study of the 'Beamline' (1988) at the Stanford Linear Accelerator Centre (although it is technically an electron storage ring rather than a particle accelerator).

This incident is a classic case of what Latour and Woolgar called the 'social construction of scientific facts' (1979), in which layers of practical and material work are successively erased in the production of scientific knowledge. Except it is also a comment on the relationship between hierarchy and work inside the Max Planck Society, as the erasure of materiality is also the erasure of the contributions of those with the most material engagements: the names of these technicians will not appear on the scientific publications which may result from the experiment. In Latour's thesis he does not make a substantial analytical distinction between scientists and technicians, both are equally involved in the material dissolutions which are a sequential stages in a 'dialectic of enlightenment' (Adorno and Horkheimer 1997). However, this event, in which it is principally the labour of two technical workers, which produce the entirety of the material assemblage which will generate the numerical quantities subsequently analysed, demonstrates a much sharper divide in *who* is involved in which stage of 'construction'.

Yet it is not only practical, nor professional knowledge, that the technicians embody, particularly among the female lab workers. 'Experience' extends not only to manipulating material assemblages, but also to inhabiting the Institute and having a deep knowledge of its contents. One very long-term lab worker is in the process of retiring, and so her successor has been shadowing her for the past one-and-a-half years in order to apprentice to the position. However, because the retiree has been in the department 'since forever' it will be impossible for the successor to absorb all of the knowledge she has managed to accumulate in that time. Up until now, scientists were used to asking the retiree where miscellaneous pieces of scientific equipment can be kept, 'because she knows in whatever cupboard in the basement things can be found!', and her successor is anxious that her paucity of experience in the department will mean that she will not be able to act as a sufficient substitute for her predecessor, at least for several years. 'I certainly don't have all her knowledge yet', she tells me sincerely. As with Frau Steiner, the kind of knowledge lab workers embody cannot simply be transmitted from one individual to another ('there is no way I can store up the knowledge of other people'), but rather must be accrued individually over a long period.

In short, when it comes to knowledge, technicians exhibit a different realization of what those other organisational analysts would call agency.[35] I would refer the reader again at this point to the diagram on page 31, as agency must be understood as one particular development in this Enlightenment vision of self: in which the transformation of the world beyond can only take place through manifest action on the part of that self. The technicians' agency, on the other hand, is strictly Counter-Enlightenment. It does not have to be constantly demonstrated through action, as this action, this transformation, takes place *within* the self. In Aristotelian terms, it is inner – rather than outer – 'entelechy' (La Vopa 1988: 161).[36] This emphasis on inner transformation, if one wished to dig deeper, originates in the tracts of the German mystics like Johannes Tauler, is carried through in Lutheran and Pietistic Protestantism through the idioms of *Beruf* and *Bildung*, and subsequently eulogised by the Idealists. As Humboldt famously said, 'He who can say to himself as he dies, "I have seized as much of the world as I could and have changed it into my humanity", has reached his target, has achieved what is called living in the highest sense of the word' (cited in Dumont 1994: 94). To be inwardly transformed is thus to be human, to be, in Maussian/Dumontian terms, a person.

vii) The Institutes

Finally, I turn to the dynamics of encompassment as it effects the technicians through their relationship to the Institutes. Again, it is with the assistance of Germany's own texts that we can theorise the shape of technicians' relationship to the organisation. Ferdinand Tönnies distinguishes between two types of human 'will' – 'natural will' (literally 'being will' *Wesenwille*) and 'rational will' (*Kürwille*) (2002: 103). While the former is 'the will which includes thinking' – a way of relating to something organically in which action proceeds naturally therefrom – the latter is 'the thinking which encompasses the

35 Cf. Chapter 1.iii and iv.

36 I first came across this different understanding of agency in Saba Mahmood's extraordinary critique of the concept through her work with Egyptian Muslim revivalists (2005). As to why this particular strand of German Protestantism echoes a form of conservative Islam I leave to the attention of another scholar.

will' (ibid) – in which the thinking subject is themselves the author of the will to action. When John Law describes the technicians' urge to be 'distant from the organisation' (1994: 133), fantasising about boating holidays or relaxing at home, their attachment to the laboratory would be a case of rational will. (If they long for distance then logically they are only at work because they are willing themselves to be). Meanwhile Max Planck Society technicians, who intentionally come back from their holidays early in order to water the plants, exhibit the will to act Tönnies would call 'natural'. By now it should be clear that this kind of natural will is already present in Luther's *Beruf*, and his insistence upon the 'inner willingness to do and bear all that is required by vocation' (Wingren 1957: 64).

To explore this through the concrete: the first thing to note is that technicians are not employed by a director, who they often precede (and sometimes outlast) but by the Institute at which they work. As a consequence, there is quite a bit of traffic of technicians between directors of the same Institute. At the founding of one department, several of the technicians were simply transferred from others to fill the posts. For the newly-hired scientists, it was the technicians who 'showed them the ropes' and functioned like a welcoming committee, ('They were all really friendly, asking us all where we'd come from'). The embeddedness of the laboratory workers within the Institutes is often felt to be of great benefit to the scientists. As it is through the networks of these (almost universally female) exchanges, that instruments and equipment can be shared among departments, even when the relationship between their respective directors may be marked by a playfully competitive edge. One group leader describes his experience of the female lab workers in his department,

> 'You could say I inherited them from the Institute. Science is quite dynamic and these people on Institute contracts end up joining us, they have a lot of knowledge about the Institute as a whole which can be really helpful. They're the glue that keeps the lab together. They can use their connections if we want to use other resources or if

things need to get repaired, they know who to talk to.
Having someone who's been around for a while is great.'

Here again, we see the intimate connection between the velocity of science, ('science is quite dynamic') and the stasis of the technicians ('someone who's been around for a while') in the smooth functioning of research. Indeed, the powerful phrase – 'they're the glue that keeps the lab together' – suggests the absolute necessity of this group in making anything possible at all. This is the 'complementarity' of the precarity and longevity principles in action.[37]

The upshot of this particular contractual arrangement, is that technicians are not encompassed by the hero principle through their alignment to a single director, but to the 'collegial directorship' of the whole Institute whose incumbents come and go. It is the Institute which then becomes the object of their natural will, the Institute which is the focus of their attachment and motivation for work.[38] This is particularly true for the workmen, who are ostensibly autonomous from specific directorial leadership: a fact which is impressed upon me during one vivid encounter. In the midst of interviewing the men in one of the workshops, I meet one particularly energetic member, who, understanding vaguely that my work is a 'social study of science', takes my visit utterly in hand. The moment I arrive, he announces excitedly, 'First - we will go to see the foundation stone!' Without time to pause for breath, I am whisked out of the workshop into the bracing January air, to another building not far away, one of the original buildings of the former Kaiser-Wilhelm Society. As we descend stairs, duck under overhead beams, and pass through labyrinthine passageways, the journey is infused with the electric thrill of adventure. He is taking me to a part of the building no scientist ever would (or perhaps could, being unaware of its existence). We go deeper, and the walls give off that musty smell of cold damp stone, finally reaching a low-ceilinged room which appears to be full of junk, stuffed with miscellaneous pieces of metal and scrappy piles of obsolete technology. In the very far corner sits the foundation stone, with a carving of the Institute's founding date in thick clear letters. 'It's down here

37 Cf. Chapter 1.v.

38 Indeed, in Lutheran terms, the Institute becomes the site of the neighbours at the centre of his ethics.

because no-one will see it', he explains, 'at that time it was all *Heil Hitler* (at this point he gives a mini- mock- Sieg Heil) and the stone provides a memory of the past'. That the foundation stone is the very first thing he wants me to see is critically important. The MPG through the medium of its scientific members has always had a complex and fractured relationship to its predecessor the KWG, but in this Institute at least, there was a great deal of continuity.[39] Indeed some large mechanical devices in the workshop date from its inception. As such, it is almost as if this character is intentionally revealing to me, the Institute's own unconscious: a 'memory of the past' down in a far forgotten corner of the basement, where 'no-one will see it'. He wants me to understand what the Institute means to him: a meaning on which elite organisational narratives have no bearing. And for him, it was an Institute founded not in 1948 but in the 1930s. From the vantage point of this kind of historical time, even individual directors are a fleeting presence.

Meanwhile, in the tradition of organisational 'sex-typing', for women their attachment to the Institute becomes channeled into tasks of nurturance and care. Beate has been working at one Institute for many years. Alongside all of her technical obligations, looking after equipment and giving induction sessions, she spends half the week working as the Institute's 'women's representative'. She takes this role 'really really seriously', as it involves being the first port of call for any female staff member (scientific or otherwise) who feels discriminated against, or has any other gender-related professional issue. A large part of her work involves organising childcare for staff members' children: connecting them with babysitters and day-care facilities. She is happy at the moment. Having held the position for over eight years, she has been campaigning for the last three to open up a Kindergarten on-site, and has finally been successful. 'It's nothing to do with science, but it's also necessary', she tells me matter-of-factly. In truth, women who take on these roles in the MPG have a great deal to do with its capacity to produce science, particularly in the context of its youthful workforce of parenting age. Technicians thus play a critical role in the cultural and social reproduction of the Institutes.

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39 Cf. Chapter 2.i.

viii) Conclusion

My identity as a *Wissenschaftler* makes ethnography with the technicians problematic. However this chapter has been an effort to turn this very problem into an analytic advantage: the resistance to the ethnographer's transcendence of hierarchy bringing hierarchical ruptures into greater relief. It provokes my awareness of the profound differences between *Wissenschaftler* and *Techniker* at the level of being: whether one articulates this as consciousness, ontology, or personhood. Technicians reckon their working hours intensively, but within this, abandon themselves to whatever time it requires to do their scientific neighbours service. They, by and large, remain within the *Land* they were raised in, converse with each other in German, and make their workspaces a home from home as they plan to remain there indefinitely. They focus on the practical and technical knowledge that surrounds the use of instruments and equipment: constantly endeavouring to improve themselves and taking pride in the singularity of their skill-set. The Institutes are their *axis mundi*, which means they often go beyond the call of duty to make sure that they run smoothly. None of these habits and attributes are exactly synonymous with those of scientists, as we shall discover more fully in the following chapter.

Such differences arise from the different purpose they serve within the organisation's totality: their 'doing doing doing' is complementary to the scientists' 'thinking thinking thinking'. On closer scrutiny this opposition the workman proffers is a very ancient one: the old association of hierarchical difference with different parts of the body, recalling Plato's distinction of the 'hands' from the 'head' (2003) in his *Republic*. The functional separation of hands and head, of intellect and practical skill, means they do not evaluate themselves, and are not themselves evaluated, according to the metrics of scientists – like those documented by Law, Latour and Shapin. There is, if you like, a deference to their difference; scientists are often humbled by the technicians' craft. 'They're much better at what they do than I am', one scientist tells us.

I have interpreted this ontology and the social status that comes with it, by embracing Dumont's distinction between status and power and threading in Luther's *Beruf* concept (and to a lesser degree, its philosophical offspring *Bildung*). Lutheran precepts, and their secular mediation through the Idealists, explain certain key characteristics of this ontology. A conception of time as unfolding in the service of one's neighbour, and of practical work as ennobling and engaged rather than damning and coerced, can all be traced back to Luther's understanding of vocation. Meanwhile *Beruf* shades into *Bildung* when it comes to the way technicians experience their agency and their knowledge. Directors are collective individuals, but so too are the technicians: they embody an internal diversity of experience and go through an inner entelechy which makes them not easily replaced. All of these culminate in what I perceived ethnographically as the defining difference of technicians to their various 'others': that they did not treat the organisation instrumentally and were not treated instrumentally by it.

In the next chapter we turn to the final group in this triumvirate. If the longevity principle is one face in a complementary dyad – the other is precarity. However, a similar overarching argument applies. The particular experiences of Max Planck scientists must also be understood on their own terms, rooted in their own antecedents, and not simply conceived of as one iteration of a philosophically homogeneous global system.

6. The Precarity Principle: Scientists

'It's quite clear I won't stay here forever because no-one really does'

Ph.D student

Max Planck scientists talk constantly about nature's movement: of plants, of cell walls, of energy, of molecules, movements which they increasingly come to know through computer simulations. Early twentieth-century visions of natural homoeostasis – it seems – have gone somewhat out of fashion. Any philosopher of science with an ear for metaphor would read a deeper meaning into this (cf. Brown 2003). It is not simply nature they are thinking through here, but themselves. 'The Max Planck is all about movement', I am simultaneously told. Not only is there a 'soft maximum' of five years to all post-Ph.D. contracts, but even if this is somehow circumvented using different funding sources, Germany's *Wissenschaftszeitvertragsgesetz* (limited scientific contract law) means that all those who do not get permanent positions within twelve years of employment are obliged to leave the profession.[1] It is unclear how many permanent positions there are for Max Planck scientists below the director. Most will say he can bestow 'one or two' at his discretion. In any event it is a negligible quantity. Usually it is quite certain these scientists will not stay inside the organisation 'because no-one really does'. It is predominantly the organised transience of this stratum that I call the 'precarity principle'.

Part of my argument is that the precarity principle is, in Dumontian terms, complementary to the longevity principle which defines the technicians: meaning that both play differing but equally necessary functions in the organisation's totality. The detail provided in this chapter, thus presents a picture of what this function is and, more importantly, the way it is experienced by the scientists in question. Broadly, if the technicians' function is to stay at the Institute for most if not all of their working lives so that they accumulate a

1 The *Wissenschaftszeitvertragsgesetz* or WissZeitVG came into effect on 12 August 2007.

practical knowledge which can be passed onto scientists, and to maintain the Institutes, then the function of the scientists is to do the very opposite. They should come for a limited time only, always be cultivating new skills and techniques, and participate in the 'excitement' of the Institutes by enthusiastically discussing and working on new scientific problems. While it is in later sections that I offer cases of what this function involves for scientists at different stages, most of the chapter is devoted to exploring what kind of a person this function produces: one I theorise using the language of precarity.

Precarity as an analytical term has, in the last few years, 'inserted itself into the heart of anthropology itself' (Muehlebach 2013: 298): having become increasingly widely used. It remains however, as most theorists acknowledge, a very broad-reaching one: which can encompass human experiences of ecological, economic or existential crisis (and sometimes all three). It has seemingly become (particularly in American scholarship) 'a shorthand for those of us documenting the multiple forms of nightmarish dispossession and injury that our age entails' (ibid). This kind of breadth however, will not really do. As a consequence in this chapter I break the term down into three significant chunks, the first two of which collect most of the ways it has been taken up by social scientists: precarity as a way of life (with its ontological, affective, and proprioceptive aspects), precarity as a labour relation, and a far lesser used meaning whose relevance will become clear, precarity as dependence.

The long history of precarity has been précised many times so I shall not do so here (de Bloois 2011, Neilson and Rossiter 2008). Suffice to say that this narrative starts becoming very relevant for social scientists at the dawn of the twenty-first century, when precarity (and its cognates, precarious and precariousness, as well as its European linguistic equivalents) emerges as the defining trope of an incipient labour solidarity movement. In this context it signifies the shared state of economic insecurity arising from temporary employment and an interstitial relationship to social care. In part ii, I explore this version of precarity as it ramifies inside the organisation. Yet while listening out for global echoes I also localize the relation. The most important site of specificity is perhaps Germany's historical precedents for the employment of

temporary workers, which are repeated in some of the ways in which scientists in the MPG are managed and conceived of. In any event a few years later, precarity's narrative changes course, when Butler (2004) takes up the term as an ontological category. Thereafter, within the academy precarity is unmoored from its roots in labour theory and rendered more anthropological, acting as a placeholder for the way subjects experience and cope with all kinds of insecurity (Allison 2012, Berlant 2011, Berlant et. al. 2012, Stewart 2012). It is this anthropological sense with which I begin in part i: tracing precarity as a way of life which extends to all aspects of the scientific person, from grammatical habits to a fondness for extreme sports. What, however, binds the two parts of this story together, is the prevailing assumption that precarity is the reality-effect of the contemporary state of capitalism, even the 'norm' of capitalism itself (Neilson and Rossiter 2008: 64).

It is this assumption I break with later in the chapter. I argue that to fully comprehend the Max Planck's precarity principle, one cannot limit the relation of precarity to a capitalist mode of production. Instead it is the feudal etymological origins of 'precarious' – signifying land held at the will of another – which conveys a large part of how precarity materializes as an autochthonous social form. The symbolic landowner is of course the director, who distributes the lion's share of the resources inside the departments. It is senior scientists and their lack of formal 'tenure' so-to-speak (another dead metaphor of landholding), who are most affected by their relation of dependence upon the director. An 'informal hierarchy' (Diefenbach and Sillince 2011) comes into play among them, in which some senior scientists go favoured, while others do not. How long and in what manner they are permitted to remain inside the organisation, is at the behest of their heroic leader.

Before developing this medieval notion of precarity, I describe the different experiences of the organisation scientists have at different stages of their career. Here I rely on the distinction Dumont posits between hierarchy and stratification, as two different logics of social ordering (1980: 2-4). Stratification, the ranking of subjects along a linear axis, has its metaphysical foundation in the principle of 'elementary man': the cultural belief in universal likeness. All those

who are stratified, despite being politically unequal, remain essentially commensurable. The members of a hierarchy, on the other hand, are incommensurable due to fundamental ontological ruptures between the levels. Max Planck scientists then, while occupying the one level of the Max Planck hierarchy, are themselves internally stratified – they possess varying capacities to act. While stratification permits mobility between positions, as all members are essentially the same kind of person, the collectivist schema of hierarchy precludes it, as their inherent difference considers this an unimaginable transgression. Thus while in theory, a young 'student worker' – who we will meet in a moment – could potentially move up to a 'group leader' position (in all likelihood after at least one extended professional foreign sojourn), the latter could never move into a directorship in the same department. Dumont's fine-grained distinction between stratification and hierarchy is thereby performed through the strict prohibition of inheritance. The mutability of the stratified meets the intransigent stasis of a true hierarchical system.

i) Precarity as a way of life

In Kathleen Stewart's articulation, precarity is one of a number of 'emergent forms' (2012: 518): writing technologies through which new ethnographic realities can be strung together, analogous connections made between 'attachments, tempos, materialities and states of being' (ibid: 524). Precarity, in this respect, is not reducible to any one of these potentially disparate phenomena, but becomes a way of theorizing the experiential continuities between them. It is, in short, no less amorphous than a 'way of life' in which some contemporary subjects are caught up (Berlant 2011: 192). For the scientists of the Max Planck Society, the precarious way of life plays out in a variety of different registers. It involves a particular relation to temporality, to speech, to place, to food, to sociability, and to the body. I shall explore these different registers as they appear ethnographically.

Despite the polysemy of precarity, most scholars agree that one of its central defining features is a particular temporality. To be precarious is to live in

a transitive, exposed, and potentially exhilarating, present, unprotected (unencumbered?) by the 'shadow of the future' (Standing 2011: 12). Indeed the transience of this population is visible straightway as I enter the grounds of the Primary Institute, in the form of the 'Guest House' which is the first building one meets.[2] A blindingly neutral white – a colour which lends itself to 'flow' better than any other (Young 2004: 9) – the Guest House is intended as a form of accommodation for short-term visiting interns or guest scientists, or new medium-term members who have yet to find a place to live. Its forty-one serviced rooms are available for anything between one night, up to a maximum of three months, and often fully-booked all year round. The interior tells us a lot about its social function. It is, as Marc Augé would describe it, very much a 'non-place': one in which the semiotics of 'place' are hollowed out, and replaced by the impersonal mediation of 'words' and 'texts' (1995: 94). These include 'house rules' in English and German, as well as a whole host of 'instruction' manuals for how to apprehend the rudimentary accoutrements of the space (the blinds, the TV, the telephone, the bins), as well as telephone lists and emergency procedures. The Guest House is intended to be a fully-equipped (but culturally blank) substitute to proper accommodation: with communal kitchens, laundry-facilities, individual post-boxes, and even its own shoe-polishing area. Everything has been considered. Indeed many of my interlocutors set themselves up there on arriving at the Primary Institute, appreciating the reasonable cost and proximity to the labs. However after a few weeks an existence entirely oriented around work begins to tire, and most end up 'moving to Berlin as fast as possible', as this hollowed out non-place starts to hollow them out too.

The present-oriented quality of their lives is also sensible grammatically. The scientists often indulge a frequent use of the present-participle to describe their work. When I ask what they get out of their experience at the MPG, they will probably respond with some reference to 'learning'. When explaining their scientific experiments they talk a great deal – not about knowledge or truth or publications – but about 'playing'. Science, for them, is more often than not a question of 'playing around' with something: parameters, instruments, software,

2 Every Institute I visit is host to a Guest House; yet not every Institute has one. If this is the case, the Institute in question will endeavour to help visiting scientists find a place to stay.

or any other variables. Interestingly, these speech habits are particularly characteristic of those who seek to carve careers in research science, who are prepared to embrace its long-term insecurity and nagging threat of failure. For those who aim towards the comparative safety of industry (in companies which maintain a Fordist model), rather than the precarity of research, these processual practices can invoke a kind of fatigue, an exhaustion. One Ph.D student, with his sights on applied science testifies that its 'frustrating to start a new topic, it's more efficient when you know something, you can get far in that field'. For him knowledge is not a way of life, an unfolding, but a thing, a fixed entity: which can sit in his mind like a book on a shelf, to be consulted whenever he needs it.

It is also there in their relation to futurity. Scientists stumble on the subject of their long-term plans. Only those leaving the profession or entering industry are cogent and relaxed on this topic. For those who wish to remain in research the question is a loaded one, and sometimes sparks a prickly or irritable response, 'Well I'm not actually able to predict the future you know', one answers sarcastically. Another senior scientist sums it with more benign resignation when he says, 'You've just casually stepped into a well-trodden but very pungent topic as far as I'm concerned. There is no clear answer'. This vagueness is usually followed by some statement of pragmatism: scientists say they will simply 'go with what comes up'. One senior scientist in his 40s – with no immediate prospect of a permanent job – has been forced to acknowledge the possibility of being a grant-hopper for the rest of his career. If no such position is forthcoming, he will simply move 'from project to project like a butterfly looking for funding'.[3]

This precarious existence involves not only moving from 'project to project', but from place to place. Indeed when one visiting intern cites two major differences between the MPG and his home institution in another European

3 The concept of a self-authored biography, twinned with a heightened reliance on the opportunities offered by institutions, is an important dimension of the 'risk society' as outlined by Ulrich Beck (1992). In his words, 'The place of *traditional* ties and social forms (social class, nuclear family) is taken by *secondary* agencies and institutions, which stamp the biography of the individual and make that person dependent upon fashions, social policy, economic cycles and markets, contrary to the image of individual control which establishes itself in consciousness' (ibid: 131).

country, while the first is that ‘a scientist can only stay for a limited period of time’, the second is ‘the number of foreign people’. This itinerant group are intensely international, an internationalism which rises statistically proportionate to status. In the Primary Institute, 45% of Ph.D students are of non-German origin, while among the postdoctoral researchers, this figure leaps to an astonishing 90%.[4] These figures are very similar for the Society as a whole.[5]

Clearly in spite of the paucity of permanent contracts therefore, the Max Planck Society remains enormously attractive to scientists from all over the world. Precarity is – as some scholars recognise – at root a morally ambivalent condition. It can mean hardship and psychic strain, but also ‘new forms of collective coming-together’ (Allison 2012: 349). This stratum of the Society is one particular ‘coming-together’ of scientists from an extensive list of countries, who have been inspired to apply by the ‘fame’ of the director, or the ‘brand’ of the organisation. Indeed I would go as far as to describe many of these participants as 'scientific migrants', not simply scientists who happen to be migrants, but actors analogous to those described as 'economic migrants', i.e. persons who move from one region to another with the primary goal of bettering their economic prospects. Scientific migrants come to Germany from a plethora of other countries, even the less wealthy nations of Europe, because the facilities inside the MPG are said to be unrivalled, and there are a high number of positions for those prepared to live the precarious lifestyle.

As we sit in the sun-dappled atrium after a long lunch, sipping espressos to the rippling sounds of the nearby water feature, with the cuckoos of wood-pigeons sweeping overhead, one senior scientist turns to me with an expansive satisfaction, 'This place is really a paradise'. Given the tranquillity of that moment, I had to agree. It is only sometime later I discover the true depth of this statement, in light of his background. Boris is one of those scientists who has lived in several different countries, and so speaks four to five languages with almost complete fluency. Yet he is not simply just another member of the global middle class, whose cosmopolitanism and professional mobility was a

4 Data drawn from the bi-annual report 2009-10, referring to the Primary Institute as a whole.

5 http://www.mpg.de/272172/Facts_Figures

straightforward ascent from a good secondary and tertiary education. Only fifteen years ago he was living in the barracks of a refugee camp in the Middle East, after his family's home was razed to the ground. He was a barely a teenager when he arrived, and luckily for him, contrary to official policy he was allowed by a benevolent headmaster to attend a local school. There he was given two choices, to study either ‘Infrastructure’ or ‘Physics’. 'I had such huge options!' he laughs with a generous dose of sarcasm, 'Okay let's do Physics!' he decided. It quickly became clear it was a subject at which he excelled: 'The Maths was just there - ready to go'. Within two years he was competing in national competitions, and winning. By this point, both his parents had left the camp to start a new life in a safer place; yet Boris made the painful decision to stay because he realised that, 'It was the only field in which I could really compete'. If he had left he would have had to start at a new school in a new country from the bottom class, losing the status he had gained so far. Eventually, he was befriended by some humanitarian aid workers who arranged for his removal to Portugal, where they were able to enrol him in an undergraduate degree. From this point onwards his scientific career developed in the usual way, and he has been at the Max Planck for a couple of years now. He appropriates our dialogue as a form of pleasurable introspection, enabling him to reflect on the unusual path his life has taken.

> 'What i'm really proud of is that decision, that struggle. All those years, and that experience, and it really worked out well. I'm really happy now. Because in the end I believed in one thing – that studying is the way to make your own role in life. And I was talented. Maybe I would never have discovered that talent in a small village in the Middle East.'

Boris is obviously an extreme case, one example of a tiny minority who actually represent the oft-overstated meritocratic potential of late modernity. However this pattern, of moving from a country where one has a very limited range of scientific options, to the Max Planck Society and Germany, I encounter from many quarters. There may be many reasons for the desirability of Germany and the MPG: for those from Iran it might be the 'political situation' they are glad

to leave behind, for those from the US, the dominance of 'directives and money', or for those from Italy, a perceived cronyism and a lack of roles in research science. On this final point, for many, the science carried out in other countries is simply not 'basic' enough. Most nations are far more likely to focus on application-oriented engineering or developing technology, than to provide generous funding for scientific work with no immediately visible use-value.[6] The Society's self-image of being driven only by intellectual concerns obviously has practical contradictions, yet it is still sufficiently legitimated to be a magnet for curious young scientists.

Interestingly, the ethnicities of these scientific migrants are predominantly expressed inside the Institutes not through clothing or other forms of decoration, nor through work, but through foodstuffs. It has been previously suggested, that one of the markers of social difference among the technical staff is their repetitious consumption of German foods in the canteen, and the same pattern emerges among scientists, although at the heterogeneous end of the spectrum. An Iranian will have pistachios on their desk which they offer out to other office occupants; an Indian will invite everyone for a curry on his final week in the department; a Chinese scientist will bring cold green teas and bowls of Chinese sweets to their leaving party; while a couple departing for the Middle East will invite everyone to join them in consuming a range of chick peas, couscous, flat breads, and herbed yoghurts. This expression of ethnic difference through food is also harnessed to a dissolution of this difference into the mouths of the community. Culturally inscribed food is thus most commonly used to mark the social passage points of arrival and departure. It becomes a means of presencing distant lands, while creating shared substance among those distantly present.

In *The Elementary Forms of Religious Life,* Durkheim argues that 'dietary communion' creates bonds of kinship among those who participate in it. 'Food

6 As a consequence of being so grateful for the opportunity to carry out 'basic research' in a financially-supported scientific environment, many scientists tend towards hyperbole when describing the Max Planck's resource base. Utterances such as 'they throw money at you', and 'the resources are limitless', contradict those of directors and technicians who are more likely to stress the financial ceiling under which they must operate.

constantly refashions the substance of the organism. A common food can therefore produce the same effects as a common origin' (2008: 249). His concern was with the sacred nature of the animal or plant being consumed, and how its ritual ingestion enabled those communing to share in its perceived spiritual potency. The same might be said of these ethnic snacks and meals. While creating bonds which imitate kinship, their consumption also betokens the sacred character of cultural difference. An important facet of the precarity principle is therefore a profound xenophilia. One director stresses that, 'One of the most important things about the Max Planck is that it is so international. There are so many different cultures passing through', a sentiment oft-echoed in the Society's own promotional literature.[7] One might also choose to pick up on the phrase 'passing through'. Despite providing these fantastic opportunities for non-German scientists, very few of them segue into a position of any endurance.

Precarity thus invites particular intersubjective events. The consumption of multicultural foods is one small way in which scientists manage their geographical deracination, and the enforced 'stranger sociality' (Povinelli 2006) which characterises this ever-shifting human landscape. Another, more significant way, comes from within the practices of the organisation itself. A rabble of strangers could easily be discordant with the organic relations necessary for scientific production, and so the forging of affinities among scientists around the director is a functionally necessary one. As a consequence, every year, once a year, a department will converge for their *Klausur:* a three-to-four day communal 'retreat'.[8] The trip provides 'an opportunity to just talk, to get to know everyone', and takes place alternately in a location of the department's choice (which in the first department I visit becomes a small town on the Baltic coast) and *Schloss Ringberg*.[9] In addition to the current scientific members of the department, departmental alumni, friends of the director from other organisations, and technicians all attend. Not surprisingly, a substantial chunk of

7 http://www.mpg.de/272172/Facts_Figures

8 The German word comes from the cordoned-off section of a monastery, to which monks could privately retreat for quiet and reflection. The most common contemporary meaning of *Klausur* is now a written examination.

9 I attended one *Klausur* during fieldwork while attached to a department in the Primary Institute, which forms the basis of this ethnographic description. However, I also learnt more about other departmental *Klausurs* from the testimonies of members of other Institutes.

these of these are new scientists who have been in the department for less than a year. Indeed one guest friend of the director, who had attended a previous *Klausur,* seems rather taken aback by this sea of strangers, confessing in his presentation that, 'There are so many new faces i've never seen before!'

Directors may have different ambitions for the kind of effects they wish these trips to elicit, but they are mostly a mixture of scientific presentations and large-scale meals, as well as several non-scientific outings (in the case I experience a physically demanding 'dragon-boat' trip, and an 'engineering-tour' of the inside of a cathedral).[10] The social and the scientific are thereby fairly self-consciously spliced together, and it must be noted that most outings, all accommodation, and all meals are financed by the Society.

Despite the busy itinerary and instrumental approach to leisure it produces, the *Klausur* is also re-appropriated by the scientists as a space of play. Every evening, once the formal schedule which ends with the evening meal has drawn to a languorous close, scientists gather on the beach to explore their Dionysian sides. Sounds of 'Ja'!... 'Oui'!... 'AQUI!' burst forth from those playing group volleyball in the twilight, while the distant notes of a piano can be heard from the hotel, as a senior scientist plays from memory. Meanwhile, other scientists skit around the beach after glow-in-the-dark shuttlecocks in their badminton games. When darkness falls, wrapping everyone in its black cloak of conspiratorial intimacy, they curl up tightly together on beach rugs clutching generously-proportioned vodka mixers in plastic cups and sharing cigarettes. As the hours roll by the talk becomes more animated, the jokes more risqué, the laughter more brazen. This lot know how to have fun. It is frequently the early

10 Day one begins at 8.30am, when all of us meet at the Institute to clamber onto the bus which brings us in a three-hour journey to the coast. After lunch on arrival no time is wasted; we immediately begin with presentations from senior and guest scientists, in a session chaired by the director. The afternoon session features more presentations from senior scientists, and the working day ends at 6.30pm, followed shortly by dinner. The subsequent day is 'Student's day', in which all students are asked to give a presentation of ten minutes on any topic of their choice. This is then followed in the afternoon by a 'cultural program' (the cathedral tour). Much the same happens the following day. It should be noted, that every hour is scheduled in an itinerary which is pre-circulated beforehand. Although it integrates spaces of leisure, this is by no means a holiday. Rather it must be understood as a very focused and highly structured form of social bonding.

hours of the morning before the last souls finally clamber back up to the hotel and to bed.

What this last scene shows us is one of the key ways in which precarity has been taken up by social theorists (cf. Berlant 2007, Butler 2004), as an affective relationship: a relationship to the body and its patterns of feeling, its proprioception. Excitement and ebullience is one of these: 'Max Planck Culture – Joy' becomes one of my tags. Another is a self-confident and daring physicality. These scientists do not just play volleyball, they throw themselves headfirst into the sand to keep the ball elevated. They do not just go on a boat trip, they go on a *dragon* boat trip – which means paddling a longboat in unison as fast as they can, to the rhythm of a loud banging drum. These episodes are representative of their attitude to sports more broadly: as they are, in the main, adventurers and daredevils who like to push themselves physically and psychologically. This is often done collectively. They go rock-climbing together on a regular basis. They go on substantial cycle rides, go-karting, snowboarding, surfing, mountain-climbing, and are even taken up in a glider plane by one aviation-enthusiast postdoc at the weekends.

Sports in any place and time, can and have functioned as ways to enact social roles and ideals, and become practices through which social ontologies are explored or reproduced. The fondness for collaborative extreme sports among this group thus crystallizes their relationship to the mode of scientific production in an analogue manner: one which is at the same time social and precarious. With respect to the latter, it is not that there is any obvious causal relationship between extreme sports and the 'risk society' (Beck 1992) – the socio-economics of which we shall come to shortly – but as Jonathan Simon argues, the processes and discourses of extreme sports can 'function as resources of self-fashioning. In that sense they provide practical experiences, ideas and narratives around which new kinds of subjectivity are being created and popularized' (2002: 180). Rock-climbing and flying in glider planes become unconscious strategies for 'embracing risk' (Baker and Simon 2002): taking one's body out of its habits of comfort into a space of experiential uncertainty. But yet there is always someone else standing by: belaying the rope from which you hang, steering the plane in

which you glide. Scientists support each other in their precarious states, as they climb ever higher with no safety mat.

ii) Precarity as a labour relation

The definition I have just advanced, of precarity as a 'way of life', is – historically speaking – a later incarnation of the term. The idea of precarity first emerged in 2003 as 'the central organising platform for a series of social struggles that would spread across the space of Europe' (Neilson and Rossiter 2008: 52). At mayday protests which began in Milan in 2001, and in eighteen further cities in the following years, precarity meant a new kind of political subject with a new relationship to the mode of production: one defined by 'precariousness of residency, of labour and work, and of social protection' (Standing 2011: 3). Inaugurated by 1980s labour market deregulation and its new 'individualization of risk' (Beck 1992: 136), it is one which was increasingly replacing the subject of the twentieth-century Fordist model – in which welfare states had been tied to a parallel systems of permanent employment. For activists and scholars alike, such a comparable socio-economic condition made those living precariously a class-in-the-making: the 'precariat' (Karin Amamiya cited in Allison 2012: 349, Standing 2011).

The language of class however, lacks anthropological nuance. As Neilson and Rossiter point out (2008), one of the reasons for the failure of precarity as a term around which solidarity could be mustered in these years was its sheer scope: being a labour relation which could connect domestic workers in Hong-Kong to software programmers in India (and therefore neither). In this section therefore, while exploring some of the 'global' characteristics of precarity as a labour relation which many of the scientists of the Max Planck Society share – defined largely by its temporary quality and fractured relationship to social protection – I will also note the way in which it is situated within a particular German history. There are several different strands to this particularity. Firstly, the exponential expansion of transient labour begin slightly later – after the collapse of the Soviet Union – when the Society became far more international in

population and outlook. Secondly, the complete exclusion of the directors from any of these trends towards precarity mimics the exclusion of the 'full professors' from the crisis in the German university system in the late nineteenth-century (making it expressive of a prevailing historical distinction between the hero and precarity principles). Finally, the cultural idea of the temporary foreign worker has a number of antecedents in Germany: most famously in the form of the *Gastarbeiter,* the people-power behind West Germany's post-war economic miracle.

Most of the discussion in this section will have its basis in statistics. To begin: the current contractual arrangements among natural scientists in the MPG can be illustrated by a graph taken from one of the Secondary Institute's annual reports.

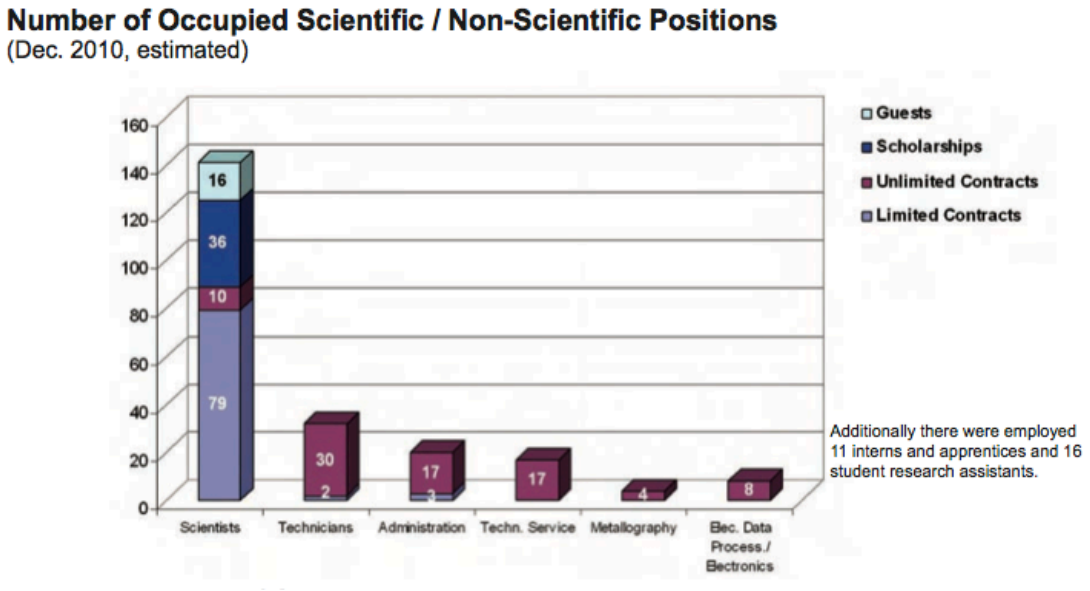

Figure 13.

Of a total of 141 scientists, only ten have 'unlimited contracts', i.e. permanent positions. Considering this already includes the four resident directors, this is an average of 1.5 per department, or just 7% overall.[11] In brief, as the Ph.D student

11 Meanwhile, the longevity principle is also very clear here. Of a total of 64 members of technical staff, only five are on 'limited contracts', which means with permanent positions constitute 78%. The enormous gulf between 7% and 78% shows statistically, the profound sociological difference between precarity and longevity.

with whom we began this chapter tells us, no scientist really expects to 'stay' inside the Max Planck Society. Although there *are* permanent positions, they are extremely scarce, and thus do not constitute a reasonable horizon of ambition.

Yet was it always like this? In brief, no. However, the Society's bizarre – and quite frankly obfuscating – approach to statistical representation makes any longitudinal study of employment inside the organisation extremely difficult.[12] The metrics which appear in their annual reports change constantly, obscuring the analysis of long-term trends. In the 1980s, they assiduously count the number of scientific guests from the *'Ostblock'*. From 1991 onwards, the number of female staff makes an appearance. As for the nature of contracts, by the twenty-first century the metrics become so diverse that the graphs which follow are at best an approximation. From the 1960s onwards a binary distinction was posited between *'wissentschaftliche Planstellen'* (which I am assured by the Max Planck archivist means permanent scientific posts) and *'Gastwissenschaftler und Stipendiaten'* (guest scientists and scholarship-holders, i.e. those working on a temporary basis). By 2002 the distinctions between scientists have multiplied and the true aggregate number of those on temporary contracts becomes difficult to assess. Nonetheless, I have compiled the following graphs from the information available in the Society's annual reports (*Jahresberichte*), stored in the Max Planck Archive in Berlin.

12 The Statistical Office of the Max Planck Society refused my request for assistance in compiling these statistics: saying that because every department is different, this kind of quantification is impossible.

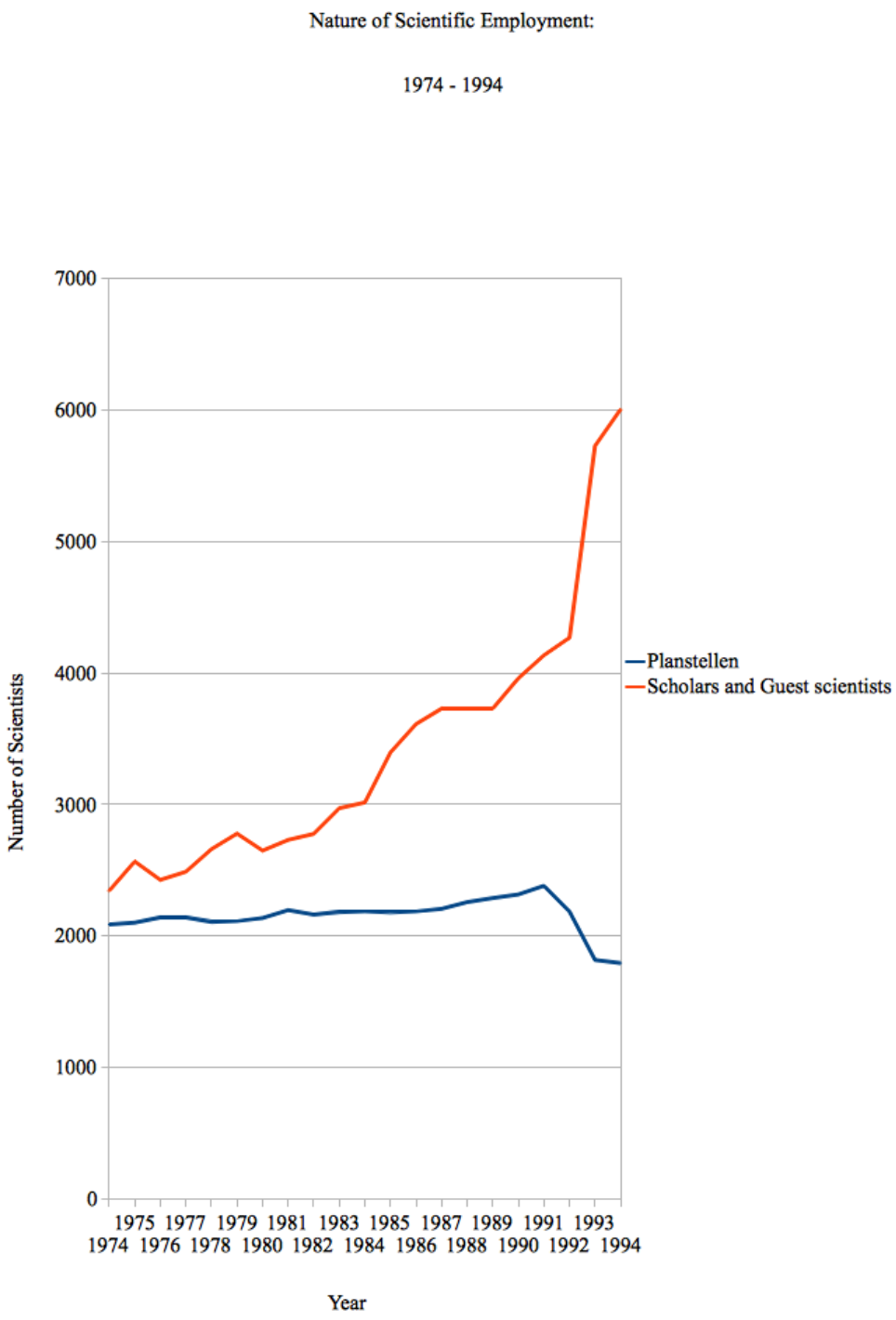
Nature of Scientific Employment:
1974 - 1994
Number of Scientists
7000
6000
5000
4000
3000
2000
1000
0
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994
Year
Planstellen
Scholars and Guest scientists

Figure 14

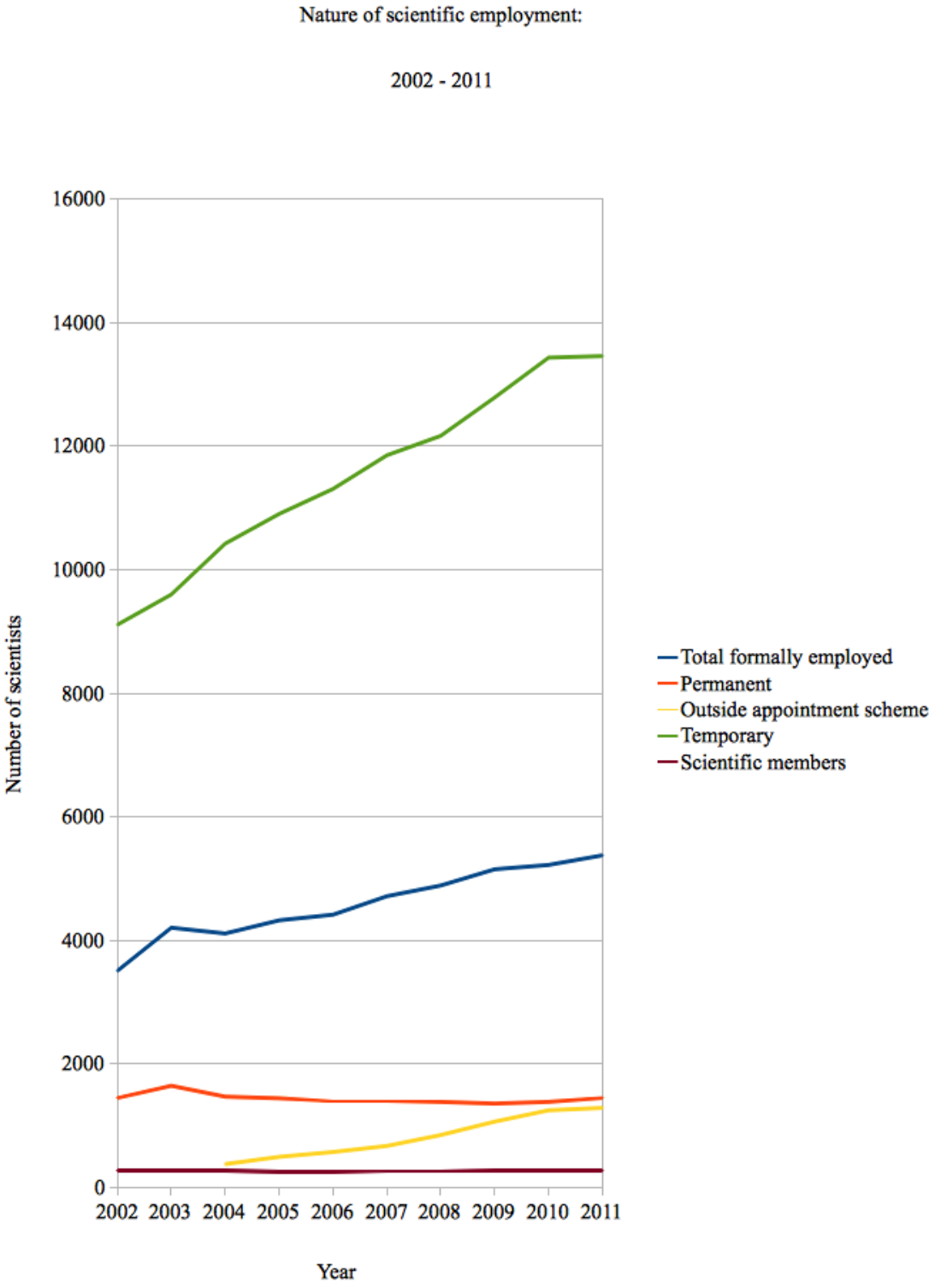
Nature of scientific employment:
2002 - 2011
16000
14000
12000
10000
8000
6000
4000
2000
0
Number of scientists
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011
Year
Total formally employed
Permanent
Outside appointment scheme
Temporary
Scientific members

Figure 15

From 1974 to 1994, the number of *'wissenschaftliche Planstellen'* (permanent scientific posts) begins just above 2000 and climbs slowly but steadily until East Germany is dissolved in 1990, and its *Länder* furnished with new Institutes. In the report of 1992, a new metric enters the equation for the first time, *'Zeitverträge bei Wissenschaftlern'* (scientists on temporary contracts), which cuts into these permanent posts, reducing their numbers.[13] If one considers the second graph, these numbers have been fairly steadily declining right up to the present day, with a lower number of *'Planstellen'* than that recorded in 1974.

Meanwhile, the other major cohort of scientists from the 70s - 90s is constituted by *'Stipendiaten und Gastwissenschaftler'*, (junior scientists on scholarships and guest scientists), and rises steadily at a much faster rate than their colleagues in formal scientific posts. Again we see a significant change after reunification: with this figure almost doubling in the years after 1989. These categories then come to signify something rather different. While the number of guests and scholarship-holders before 1990 might plausibly be interpreted as emblematic of a centuries-old system of scholarly training and exchange, during the *Wende* the particular meaning of these employees takes on a different hue. Their increasing statistical dominance comes to look a little more like the organisation taking advantage of the informalization of work contracts, which had by that point become increasingly common in the private sector (Barley and Kunda 2006).

The second graph shows the more complex and opaque way in which the scientists' employment status comes to be recorded by Max Planck statisticians in the 21st century. This will require some explanation. Instead of a dual system of those with posts and those without, there are now a whole range of different categories. The green 'temporary' line indicates not only guest visitors and those on scholarships but, 'student workers, fellows of the international Max Planck Research Schools, doctoral students, postdoctoral students and research fellows':

13 By necessity, the figures from 1992 onwards are my own mathematical calculations: worked out by multiplying the total number of *'wissenschaftliche Planstellen'* with the percentage recorded on permanent contracts. These percentages are steadily declining as the years roll by: 1992, 68.6%; 1993, 59.6%; 1994, 59.5%. In 1995 the metrics change again, and there is no detail on how many *'Planstellen'* are temporary or permanent.

all of whom now make up an astonishing majority of all scientists inside the organisation.

Meanwhile senior scientists are segregated still further. The blue line indicates those formally employed: directors and members, heads of independent research groups, senior research scientists and academic staff, essentially all scientists above the level of postdoctoral researcher. Until 2008, the MPG assiduously records the percentage among these on temporary contracts. As the graph indicates, the number of employed scientists with permanent contracts (the orange line) is on a downward trend. In 2002 55.8% of scientists with posts are on permanent contracts, and by 2008, this figure has decreased year upon year to 40.6%.[14] However, something very interesting happens in the report of 2009, by which point this trend is unequivocal. A new category is introduced: 'scientists outside appointment scheme'. These are effectively senior scientists inside the organisation who become informally employed, and thus removed as a separate quantity altogether. It is then only the percentage of those scientists *inside* the appointment scheme, whose contractual status is recorded. The percentage of those with permanent positions then starts to rise, transforming the statistics entirely (2009: 58%, 2010: 58%, 2011: 59.8%). When the statistical office decides to count something, they then shoot it back into the past to indicate a pattern. From 2009 – 2011, those 'outside the appointment scheme' are thus retrospectively counted from 2004.

Possibly the most interesting line however is the purple, the number of 'directors and scientific members': the organisation's elite we met in chapter four. Relative to the whole scientific population – which is now positively booming – this number is almost completely stagnant, a flat-lining of those with the most security and status. In 2011, 277 scientific members are effectively governing an organisational population of 21,831: to be precise, a ratio of 1.3% to 98.7%.[15]

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14 The permanent line is again data drawn from my own calculations. I have multiplied the total number of scientists on institutional funding, by the percentage of those given as being *not* on temporary contracts. Thus for the year 2002 this means 2629 × 0.0558: as there are 2629 scientists paid from institutional funding and 44.2% of these are listed as being employed on a temporary basis.

15 Much like the proportion of dominance which inspired the political rhetoric of Occupy Wall Street.

As a big picture these graphs then offer three analytical conclusions. The first is the statistical evidence for what much of the previous section rests on, the transient relationship of the majority of scientists to the MPG as a whole, and the beginning of this trend after reunification, when the Society becomes more self-consciously international in vision. Particularly after 2002, the organisation has thus come to rely very heavily on a young, itinerant, scientific workforce to make possible its ever-increasing outputs. Secondly, the increasing trend towards precarity is not simply about employing a larger share of young scholars, but about incrementally removing the security of those more senior. Much like several of my participants, those in their 30s and 40s are now systematically placed 'outside appointment scheme', i.e. in the same insecure relationship to the organisation as those in their 20s. Lastly, relative to the whole organisation, there is a clear concentration of power at the very top. Although the reforms of the 60s and 70s were introduced to contain the dominance of the directors – as manifested in the earlier version of the Harnack Principle – by the twenty-first-century their influence in a *quantitative* sense has dramatically increased.[16][17] In this sense, the Max Planck Society dovetails with parallel tendencies towards the concentration of elites across the world at large.

Because of such symmetries we might be tempted to explain these numbers away in global terms. However such an explanation would only provide part of the answer; there are deeper autochthonous hierarchical processes at work here. After all, if precarity is an ever-expanding phenomenon, why doesn't it affect the directors, who remain security incarnate? A historical perspective can take us the rest of the way. In Fritz Ringer's classic study of the German academic crisis in the late nineteenth early-twentieth century, *The Decline of the German Mandarins* (1969), he paints a strikingly similar picture. In the nineteenth-century the German university hierarchy was organised around full professors (age fifty and up), associate professors (in their forties) and instructors

16 Cf. Chapter 2.i.

17 It is worth noting that even in the very earliest years of the Kaiser-Wilhelm Society, the number of scientific members is quite similar. In 1914 the annual report records 200 members. With some periodic exceptions, the aggregate number usually hovers in both societies between 200 and 400.

(*Privatdozenten*, in their thirties).[18] Before 1870 the population of the latter two was fairly proportionate to the former, and they were not expected to do much actual teaching, considered 'apprentices and journeymen of learning' before settling down into a salaried teaching post (ibid: 54). However, from 1890 onwards, as enrolment increased substantially – due to an expanding population and broadening aspiration – the number of associate professors and instructors increased by a multiple, while the number of professors rose only very incrementally (analogous to what we see on the second graph). Increasingly, it became the former two who performed the bulk of the pedagogical labour in the universities (which prevented them from advancing professionally) while at the same time remaining 'totally excluded from the agencies of academic self-government' (ibid: 55). The hierarchy of the universities thus became more pronounced as numbers grew, creating social divisions and tensions which had not been there previously. As Ringer says, 'The academic pyramid tapered very sharply at the top' (ibid: 54). We could see all those I have called 'senior scientists' (cf. section iv) as cultural descendants of these associate professors and *Privatdozenten,* while the directors are self-evidently those of full professors.[19] At heart is the principle of incommensurability between those at the top of the scholarly tree and those just beneath it, and the subsequent dependence of the latter upon the former: an idea we shall return to in later sections.

Finally it should be restated that precarity as a labour relation is about more than temporary employment. It extends to the relative provisioning of social protection: particularly against unemployment, illness, injury and old age. In this respect, there is evidence that non-natives working in Germany on a temporary contract lose out on such privileges. In 2004, a number of Italian Ph.D students employed by the MPG, appealed to the European Parliament and the European civil court against the discrimination which applied to the contractual

18 *Privatdozenten* were named as such because they were afforded no regular salaries, but drew their income from private lectures for students in return for fees, a historical precedent for the precariousness of contemporary knowledge workers.

19 Even the age-ranges are very similar.

arrangements of non-Germans.[20] They claimed that while 99% of German Ph.D students at the MPG had regular contracts which included health, unemployment, and pension benefits, 84% of the non-German Ph.D students were given 'scholarships', i.e. formal contracts from which such benefits were omitted (Burgermeister 2004). This meant that non-German students were obliged to pay these social security costs separately, resulting in a lower overall net income. The European Court approved their case and ordered the Max Planck to change its contract policy, although there is still some ambiguity as to whether this was in fact systematically implemented. Indeed the slippage between scholarships and contracts is mentioned by one participant as 'a trick they have to keep you working longer', being a route around the 'soft maximum' of five years.

The position of non-Germans and non-Europeans relative to the question of social protection is raised as a concern by some of my participants. One extra-European complains,

> 'You're definitely worse off if you're a foreigner. You're less secure...You have to pay your own health insurance...Some things aren't quite kosher, aren't quite fair...There's different pay scales, and foreigners don't get a pension in their home country. So you're paying money into a pension fund which you won't be able to use'

The issues he notes echo those of the Italian Ph.D students, as they concern the loss of several different forms of social protection. Although explicit questions regarding the specific contractual nature of these scientists' relationship to the MPG were not part of this research, comments like these suggest several issues regarding the rights of non-Germans remain unresolved. Indeed another non-German senior scientist takes his critique one step further, 'Everyone gets the feeling that they are scientific *Gastarbeiter*. Come and do some work and then go; but don't stay, we don't really want you to'.

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20 http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+WQ+E-2004-1301+0+DOC+XML+V0//EN&language=EN

This comparison to the West German '*Gastarbeiter*' of the 1960s and 70s is a charged one, but not without pertinence. From 1955 onwards, the Federal Republic of Germany signed recruitment treaties with Italy, Spain, Greece, Turkey, Portugal and Yugoslavia, in order to solve its labour shortage by offering their inhabitants one-year work permits.[21] These so-called 'guest workers' (*Gastarbeiter*) were the quintessence of precarity: as the prospect of permanent migration had been foreclosed in advance by German legislation, which until 2000 still based citizenship on the 'Law of the blood'.[22] Theirs was to be an unequivocally temporary condition.[23] They were also denied that second aspect of labour-related security: social protection. While paying income and social security tax through their wages, thereby 'subsidizing the social welfare system' (Chin 2007: 45), they were ineligible for benefits awarded to native Germans therefrom, such as unemployment insurance. Guest worker policy was designed to serve a purely economic function, and those granted permits were likely to be the young and physically strong: able to put in a demanding days work in the factories without complaint (ibid: 1).

However it should not be forgotten that guest worker policy had its own antecedents. During the boom years of the Prussian state (after 1871), when its agricultural sector was expanding rapidly, it suffered a similar dearth of workers. Polish migrants were invited across the border to meet the intensive demands of sugar beet cultivation. Less than a year this time, their work permits were seasonal, lasting only for the summer months (April to November), forcing them to return East when their labour was no longer needed.[24] Again they lacked adequate social care. Not only were they denied the enduring advantages of the patriarchal and semi-feudal systems of estate agriculture (Herbert 1990), but they

21 Although it was the Turkish 'guest worker question' which came to dominate the cultural debate which followed from the mid-1980s onwards (Chin 2007, Mandel 2008).

22 The legal term is *Jus sanguinis*, based on genealogy, rather than *jus solis*, based on the inhabitance of place (Mandel 2008: 210-217). The guest worker's relation to German citizenship was therefore different from their fellow economic migrants in Britain and France during the same period. Most of these were former colonials so possessed citizenship or the right to permanent residence by virtue of that status.

23 Although as Chin notes in practice, the West German government kept renewing their visas and extending the length of their residence (2007: 52).

24 These conditions were in practice before then, but not officially legislated until 1908 (Herbert 1990: 34).

were uninsured against disability, old-age, and most health problems.[25] Prussian industrialists and the state could thus reap the huge financial rewards of their work, without having to meet any of the costs of social reproduction. Those granted permits were all unmarried young men. As one Prussian estate owner put it, 'There are no expenses for school, churches, and relief for the poor when foreign workers are involved' (cited in Herbert 1990: 30).

Clearly all of Germany's foreign workers have had very different kinds of treatment.[26] The situation of the *Gastarbeiter* was a great a improvement on that of the Poles, and that of the foreign Max Planck scientists much improved again. As we learnt in the previous section, most scientists are simply grateful for the resources the Max Planck can offer them. For those like Boris, the organisation really is a 'paradise'. However the grumblings which erupt every so often – like those above – suggest residues of the past remain. Indeed I would posit three strands to this continuity which emerge in light of the data assembled. The first is the link between non-German ethnicity and a temporary employment status. We can see this in the graphs: as the demographic of the Society becomes more international in the 1990s, the proportion of temporary employees explodes. Secondly, there is a similar relationship to social protection. Scientists are paying into a pension they 'won't be able to use', thereby subsidizing the German welfare state and putting their future at greater risk. Finally, there is also great emphasis placed on achieving the most productive workforce possible. The horsepower of the Max Planck comes from its 'young, motivated, excited' employees, so much so that those who turn thirty feel 'old', while those in their forties already 'dinosaurs'. Topically, we will now turn to the perspectives of the Society's most youthful cohort.

25 There was some provision of accident insurance.

26 I have intentionally omitted the forced labourers (*Fremdarbeiter*) Germany used during the Second and First World Wars from this discussion; as despite the continuities posited by Herbert (1990), coercion is a very different drive to action than economic betterment.

iii) Junior scientists

Having explored precarity in some of its quotidian and economistic forms – as a basic condition in which all scientists participate – now the argument changes tack to meet the points at which their experiences diverge. While being commensurable members within the hierarchy, the scientific tier is itself internally stratified, and precarity can take on a very different flavour depending on one's professional location. Broadly speaking, I categorize two overarching types of scientist who share a common relationship to the organisation (and thus attitude towards precarity): junior and senior. Junior means student workers, Master's students and interns, and Ph.D students; while senior means postdoctoral researchers, independent researchers and group leaders. Essentially the distinction is between those who are still explicitly at the stage of training and apprenticeship (usually aged below 30), and those who have learned, or are beginning to learn, how to apply that knowledge in the service of original research (30 and above). Before meeting the senior scientists in subsequent sections, we shall rise through the ranks of the junior.

The very bottom tier of the scientific hierarchy in the Max Planck Society is made up of 'student workers' or 'student assistants', (two translations of *'Studentische Hilfskräfte'*, or the diminutive and ever so slightly condescending *'Hiwis'*).[27] Their positions might be financed directly by the MPG, or in a minority of cases by 'third-parties' (for instance funds may be directly allocated for 'two student workers' as part of a successful grant application).[28] All the student workers I meet are from the Primary Institute, and are German nationals, recruited from the universities through personal contacts. One student worker may inform a fellow student of a vacancy, or the scientists within the Institute might put someone they know forward. Unlike all other scientists in the first department I visit, the student workers are not appointed through a public

27 Among the scientific population of the MPG overall, student workers make up a surprisingly large proportion: over 11%. (This is calculated from 1504 out of 13508, i.e. not including technical, IT, administrative or other miscellaneous Max Planck staff (http://www.mpg.de/4500179/Annual_Report_2010)). Indeed in 2010, there are 189 more student workers than there are postdocs working in the Society.

28 In the 2010 annual report, 218 student workers are paid for by third parties, and 1286 by the MPG.

'application seminar' process, as they are not considered researchers in the normal sense.[29] The denotation – 'student *worker*' – provides a significant clue here. These individuals and others often refer to their role as 'work', or 'a job' (terms which would be unheard of among scientists). The only other members of the departments doing 'work' are the technicians, and the parallel is not incidental. Student workers, like technicians, are contracted to work a certain number of hours per month (usually under 80), and are paid according to these hours. Time is thus 'reckoned' in the same way for both (Munn 1992): as a commodity. The duration of a student worker's contract is not fixed, but in the cases I encounter it hovers around one calendrical year. Student workers may be completing work they are required to do for a Bachelor thesis alongside their 'job' – or may simply, as one scientist puts it, be 'cleaning the tubes basically', performing the most menial tasks on offer. However beginning at the MPG as a student worker is not without its opportunities. Student workers may end up staying longer to carry out a 'Diploma thesis', and from there remain still longer as a Ph.D student. This is the way some of my German scientific participants began their careers.

Student workers are also different from scientists in the sense that they do not participate in what Barley and Kunda call the 'network of practice' (2006: 276): the binding and unbinding of social ties as projects begin and end. When asked to identify their links within and beyond the department, they can really only name one: the senior scientist whose professional care they fall under. This individual will set their student worker small, simple and repetitive, tasks which need to be completed as part of their research projects – although a student worker would not carry out experiments which end up in publications. These senior scientists often take an avuncular manner towards those in their charge: 'checking up' on them to see how they are getting on, and modulating the tasks set, depending on how quickly or slowly the student worker is able to pick them up and carry them through. Student workers can sometimes be pseudo-outsider figures within the departments, being separate from research scientists and their networks. The senior scientist may thus choose to invite them for lunch, or take it

29 Cf. Chapter 4. iii.

upon themselves to introduce the student worker to a wider spectrum of people, and improve their overall experience inside the Institute.

Despite not being fully integrated, and being sometimes charged with 'cleaning the tubes', student workers seem to relish their role. Not only are they receiving a moderate tax-free income to supplement the costs of undergraduate life, but they also benefit from a real 'exposure to scientific work...brushing against hard-core science'. This is different to their presence at the universities because it is self-consciously hands-on. The social logic of the *'Hiwis'* and their work practices, must therefore be seen as symmetrical to the young *'Azubis'* of the workshops (even the diminutives echo each other): one governed by *Bildung* or as they like to put it, 'learning by doing'.[30][31] One student worker articulates it thus, 'It's the kind of work which will educate me more than a university could do. It's practical working'. For him, this practical work is not *supplementing* his academic work, instead it is *surpassing* it, educating him 'more' than a university ever could.

Interns or *'Praktikants'* are fewer in number than the student workers.[32] Analytically, they share most of their salient features with Masters students and may even become Masters students at the end of their internship, so for that reason the two will be treated here together.[33] The main qualitative shift which occurs from student worker to intern is their identification with research and researchers, rather than 'work' and wage labour. Aside from some obligatory meetings they – like the rest of the scientific community – are given 'total freedom' to manage their time efficiently. They usually have a specific project they are carrying out and will do so fairly independently. Unlike the student workers, interns will fall under the jurisdiction of a group leader, and be allied

30 Cf. Chapter 5. i.

31 The relationship between senior scientist and student worker also bears some resemblance to the relation between the 'Workshop manager' and the *Azubi*.

32 Only 43 out of 13508, or less than 1% overall if the statistics are accurate http://www.mpg.de/4500179/Annual_Report_2010.

33 The official number of Masters students is not recorded in the MPG annual report, so they must be counted as amongst the 761 'visiting scientists'. The most notable similarity between Masters students and interns is the length of their stay, ranging from a few weeks to several months.

with the other members of that working group. They will often work quite closely with the technicians, who induct them into specific practical tasks, but are likely to have very little contact – if any – with the director. However, similar to student workers, their arrival has been instigated through personal networks rather than an anonymous application process. In their case, it is not the local, largely German, networks of the technical universities, but rather professional affinities on a global scale. All of the interns I meet are of non-German origin.

Although interns are formally included in the research community, they are the most aligned to the material culture of the laboratories, and are likely to be set highly repetitive, unstimulating work. One among them has spent several months working with a small twelve litre fermenter, carefully inscribing protocols for how to use it most effectively, while harvesting a particular strain of bacteria. The main thing that can go awry in the harvesting of bacteria from a fermenter is contamination, as the ecology inside is extremely delicately balanced. 'This has been happening since day one...it's *old* news', he explains, irritation swirling beneath the utterance. Despite working with the other technicians and scientists of his group, it appears this intern's primary relation is to the fermenter, and its issues and problems seem to dominate a great deal of his consciousness. Attachments are often unveiled through anthropomorphism and sure enough, the electronic hardware which controls this device, he names 'the brain', while the liquid contents of the fermenter itself is likened to a 'GI tract'.

Meanwhile, another intern has been charged with the task of carrying out a very carefully-timed chemical process. As a consequence, whether she is in a seminar-room, a tea-room or an office, the schedule of her work pursues her in the form of a canary yellow alarm clock clipped to her clothing. Every so often it beeps noisily, informing her that a particular stage is complete, and she dutifully gets up to return to the lab. The whole process takes six hours, and she carries out this same procedure every day. Although the Ph.D student whom she is helping is happy to delegate the 'boring stuff' to her, like other interns, she does not mind this, and is simply pleased to be apprenticed into new scientific domains.

Indeed this placidity towards the necessity of paying one's dues, is common among the junior scientists, particularly at these lower levels. One participant rationalizes it in the following way,

> 'The idea behind my internship is to do some basic work that does not require lots of qualifications, in order to step into...a low hierarchy position before having the chance later to lead and supervise people'.

The sacrifice these individuals make in 'cleaning the tubes' is one they are fully prepared for, and moreover see the purpose and benefits of. For them there is a clear sense of upward progression.

Unsurprisingly, the most populous of all junior scientists are the Ph.D students.[34] They are also probably the most familiar, scholars like myself, aged between 25 and 30. The Ph.D scientist is distinguished from the intern and student worker in that they are given a longer-term research project (generally three years), which they are expected to carry out autonomously, but with regular help from their respective group leader, and if necessary the director.

The Ph.D is not a time for radical originality; most argue that the moment to distinguish oneself scientifically comes later. Ph.D students may have a project set for them by the director and funded by the MPG, or the project may originate externally and be funded by a third-party, but still involve research in which the director has a vested interest. A Ph.D student's response to the strong delineation of their projects by those in authority can go either way. For one, despite the fact that the material being investigated, the scale being focused upon, *and* the instruments with which to do it have all been decided upon in advance, describes herself as 'absolutely free'. While another says he sometimes feels like a *'marionette'* (a puppet), because despite having his own ideas around the topic he is working on, he is obliged to follow the set projects to the letter.

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34 Ph.D students constitute 28% of the total scientific population: 3749 out of a total of 13508 http://www.mpg.de/4500179/Annual_Report_2010.

This difference thus has little to do with objective conditions (there do not seem to be relative degrees of freedom), than the individual's reaction to them. In this sense it follows Franz Boas' notion of freedom, which has meaning 'only in a subjective sense. A person who is in complete harmony with his culture is free', while a person feels 'unfree' when they see the cultural limitations imposed upon them (1942: 51). It is a given that Ph.D work will be determined either by the director – or externally – depending on how they are financed, but the *sensation* of freedom can vary widely, relative to how this maps onto the individual's own interests and desires. Freedom is the personal pleasure taken in fulfilling one's social duty.

The most interesting characteristic of Ph.D students is their relation of attachment to the organisation. While senior scientists will often apply to work in the department on the back of personal contacts, and be motivated by the desire to work specifically with one director, Ph.D students arrive in the department for a variety of reasons, which often relate to the director only indirectly. Here we see a clear native German/non-native-German dichotomy.

For Germans, the kudos of working in the third best research institution in the world after Harvard and CNRS is not their main motivation for attaching themselves to a Max Planck Institute rather than a university.[35] Instead it will either be defined by place, particularly the attractions of a large and idiosyncratic city like Berlin, or rather the material conditions which the MPG provides. 'It was not so important that it was a Max Planck Institute, but it was important how the Institute is organised', is a common sentiment among German Ph.Ds. They are less concerned with the MPG's brand identity than the material and social environment in which their research will be carried out: some arguing that the MPG is a more supportive environment for research in Germany than the universities.

35 http://www.mpg.de/1261613/Nature-Ranking

At the same time it is markedly at the level of the Max Planck's international cohort (some 45% in the Primary Institute), where name and fame seem to matter. One extra-European explains his logic when applying,

> 'Working in a research institute was the main thing, and Max Planck was one of the most famous. You carry the name in your resume until the end. So it's like, okay he has done his Ph.D there. I thought about this stuff, because sometimes you have to think about it. There is a name on the CV that you recognise'.

That the Max Planck is ‘famous’ is his central motive for applying, as he anticipates that contact with it will consecrate his subsequent career. For another, the prestige of the organisation functions intermittently to buttress his ego when he needs it to, 'If I ever do get down about myself...I can say, well I *do* work at the Max Planck Institute!' In sum for international Ph.D students, the global cachet of the MPG is enormously significant – not only for its promise of future employability, but also in a more abstract sense, the swell of pride they feel in being aligned with something 'excellent'. Among this group the fame of their director is less central (although never irrelevant), it is enough to have 'a name on the CV that you recognise': the name of the Society.

v) Senior scientists and the inheritance taboo

The anatomy of attachment is rather different at the senior level: for postdoctoral and independent researchers, as well as for group leaders. While junior and senior alike are encompassed by the director's extended social reach; for seniors this relationship is often closer, more personal, and of more professional significance. For them the decision to work with a specific director is a very deliberate one. His 'fame' – or ‘reputation’ – serves the same function as the prestige of the organisation for the junior international scientists: it is the

source of a magnetic pull which attracts their application.[36] Just as juniors emphasise the importance of the Max Planck 'brand' for their Curriculum Vitae, seniors will scale this down to the level of the department: co-extensive with the director. It is likewise characterised by a form of pride.[37] 'This department is the aim of everyone in Germany', one tells me confidently. Another uses audit data to say much the same thing, 'The scientific advisory board tells us, something along the lines that this is one of the best places to do this kind of research in the world!' For seniors therefore, 'It is not really the Max Planck itself', but the scientific vision and charisma which one particular director can afford them. One independent researcher tells me what drew her from abroad to the department she now works at,

> 'I knew I wanted to get involved in this field, so I asked around other researchers and everyone was pointing me to the same person. I started to look at the website, and everything looked interesting, but it was really about him. I'd obviously heard of the Max Planck, so I knew it was a big thing in Germany. It was a nice side effect, but the reason was really the director.'

She strikes a bold contrast to the junior scientist who uses the name of the Max Planck to cheer himself up! For her, the fame of the society is relegated to being 'a nice side effect': a phrase which sums up neatly, the marginalising of the primacy of the Society-bond as one ascends the scientific ranks. Its marginalisation is correlated to the magnified significance of the director.

The relationship between directors and senior scientists is of substantial significance to my overarching argument, as it is at this interface that the hero principle and the precarity principle collide head-on. For seniors, this is the point

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36 Cf. Chapter 4.iii.

37 Marshall Sahlins once called this form of pride, the coherence of a community around a leader, 'hierarchical solidarity' (1983: 522). He argues, 'We need a notion of "hierarchical solidarity" to go alongside Durkheim's mechanical and organic types. In the heroic societies, the coherence of the members or subgroups is not so much due to their similarity (mechanical solidarity) or their complementarity (organic solidarity) as to their common submission to the ruling power'.

at which upward social mobility within the Max Planck screeches to a juddering halt. The future is no longer an exciting unknown but – for those without permanent positions – a potentially daunting unknown. This is because a group leader can *never* ascend to the position of director in the same department. It would be an utter violation of the moral order. Indeed, one director finds this idea such a sickening proposition that he uses the language of incest to deride it.

> 'It is regarded to be asocial. Inbreeding. We have a bad experience with that in former German society. Bosses were able to promote their own sons. They invited genetic sons and intellectual sons into their positions and it led to a degrading of the quality of science. You should not have babies with your own daughters. It is even felt like that. It's regarded as so immoral that something like that should happen. It's intellectual incest. Nothing but.'

He is not alone in equating the promotion of senior scientists to the directorship to fictive incest, and it is important to pause for a moment and consider the implications of this.[38] For Claude Levi-Strauss, the incest taboo in its varying forms was not simply an aspect of culture, but nothing less than the very essence of culture itself: 'it is *the* intervention' in the social order (1969: 32). Like Tylor before him, Levi-Strauss' main argument was that rules prohibiting incest are inextricably related to the rules governing exogamy, or 'marriage alliances', and thus in fact serve a positive function. Through the specific form that incest taboo takes, the anthropologist can thereby discover the culture's norms governing social exchange and reciprocity, existing within and between social groups. We can apply this argument here very easily, despite the fact that it is fictive rather than actual incest at stake. Firstly the inheritance taboo is clearly the negative space cut by the positive function of the hero principle – the very essence of Max Planck culture – a leader who arrives from beyond the group to create a department *ex nihilo*. As the same individual puts it, the directorship is not supposed to be 'a linear extension of your previous life, but a

38 For the purposes of this discussion, fictive shall be treated as identical to real incest. In this instance, fictive incest performs precisely the same function, namely to underline the basic rules governing cultural life.

whole new system'. Secondly it raises the question of 'to whom' (ibid: 51) Max Planck scientists are subsequently 'married out' so-to-speak. This will be briefly touched on ethnographically below, but essentially this is predominantly the universities, beyond – but often within – Germany.

What is striking is the degree to which the inheritance taboo becomes internalised in the landscape of senior scientific aspiration. The stranger-king mentality is enormously successful at fortifying an imaginative firewall around the limits it sets up. When I ask senior scientists whether they aspire to be a director at some point in the future they might exhale slightly in disbelief – 'pfffff' – that the question is even being asked of them. Usually they couch their almost universally negative response in the language of personal lack, 'To become a Max Planck Director you have to be a really good, I mean a *really* good scientist, and I don't think I'm capable of this'. Or alternatively, as directors are the hardest workers in any department, this lack may not be a paucity of talent, but a paucity of commitment, 'I think I'm not devoted enough to be a director...it's your life'.[39] Finally, another genre of response is that to become a director is to bid farewell to direct involvement in science. Therefore it may be viewed as an occupation of undesirable abstraction, because it is more about 'paperwork' and 'politics' than the nitty gritty of scientific problem-solving. All of these positions senior scientists would defend as perfectly rational. There is no obvious self-deception going on here. Nevertheless, if the position *was* open to them, if it was felt that there *was* the option of succeeding the director of their department when he retired or left for another position, it is likely the space would open up for them to rationalise things very differently. This metaphysical compromise is what David Graeber calls 'the political ontology of the imagination' (2009: 512): the notion that ideologies do not simply slice up phenomena, people and things, but can also determine one's sense of what is possible or even desirable.[40]

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39 Cf. Chapter 4.vi.

40 This lack of upward aspiration is – in a sense – the antithesis of Lauren Berlant's 'cruel optimism' (2011). It shows the degree to which desire itself emerges from *within* extant architectures of value. Cruel optimism – which arises when 'something you desire is actually an obstacle to your flourishing' (ibid: 1) – is a phenomenon born of

But is the inheritance prohibition in reality so steadfast? All of my interlocutors seem to think so. It runs that a directorship is putatively *not* a position which is a senior scientist's expected due, but instead can only be earned through the display of exceptional skill. As the theory would have it, all senior scientists are competing against their peers on a global plane, as the only criteria the Max Planck Society has when appointing a new director is to find the best mind for the job, regardless of national origin. If this is taken seriously, then statistically the vast majority of candidates must clearly be drawn from outside the Society and indeed Germany.

Again, it is the Society's own records which enable us to uncover the gap between ideology and what is in fact happening in practice. By tracking biographical trajectories from the available data, for 199 of the existing 229 directors in the natural sciences, we can easily assess the empirical validity of the stranger-king idea. For a generous majority this is indeed the case: 70% of the present directors have had no prior Max Planck affiliation whatsoever before being invited to join the Society.[41] Of the remaining 30%, a further 31% of these completed their Ph.Ds and Postdocs at one Institute, usually before becoming director of another, anything between four and twenty-five years later.[42] Thus they would still count as having largely 'made their ascent' elsewhere.[43] However, the remaining 69% of this 30% portion, some forty-one directors, *have* in the past held had some group leader or senior scientific staff member position at a Max Planck Institute: twenty-one directors have moved from a group leader position in one Institute to a directorship in another. This leaves a final twenty directors who go from being top senior scientists to being directors in the same Institute. Almost half again of these – eleven directors – move from leader

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egalitarian ideology. In societies with a hierarchical ideology such as that here, the gulf between the precarious and heroic tiers is so wide that scientists do not even *imagine* themselves into the director's shoes.

41 140 out of 199 directors in the natural sciences. All statistical information gleaned here is drawn from the available curriculum vitae of existing directors (http://www.mpg.de/115929/scientific-members).

42 18 out of 59 directors.

43 This data leads me to group Ph.Ds and postdocs together, and treat group leaders and senior staff members separately. This runs against the previous separations of 'junior' and 'senior', because the aim of this quantificatory exercise is to assess the relative opportunity for Max Planck group leaders to become directors.

positions to director positions *straightaway*.[44] Consequently what this litany of figures tells us, is that despite the reality of the inheritance taboo at the level of belief, empirically it is currently being flouted by eleven standing directors in the natural sciences. Being well-known researchers within an Institute before filling newly-vacant directorships of the same, certainly looks like inheritance if it is not in name. This data makes one powerful point, that, despite evidence to the contrary, the hero principle is enormously successful at propagating itself.

In any event, as they stand outside the closed door, unless they are one of the tiny minority with permanent positions, the only forward movement must lead to another building altogether. To do this, it is imperative that a senior scientist carves out an independent niche which is linked but clearly separate from, the scientific interests of the director. The importance of nominal autonomy in assuaging senior scientific future-angst is made clear to me on speaking to one senior scientist – Leo – on two occasions, either side of a gap of several months.

At our first formal meeting, Leo clearly has an axe to grind. Despite being habitually affable and gregarious, when I meet him he appears visibly depressed, slumped slightly over his computer with a look of ill-concealed malaise. He immediately takes charge of the conversation which ensues.

> 'I'm a specialist in (a technique). When I arrived a technician had organised the whole set up, purchased and assembled the equipment, and was running it. Then they left. And the director suggested I focus on (this technique) and use it to find out about (a particular scientific problem the department is interested in). So this gave me expertise on the technique, I got really into it and became this technique-oriented guy. And this is what

44 20 directors have possessed a group leader or senior staff member position in one Institute some years before becoming director in the same Institute. Eleven directors have ascended immediately from being a group leader or senior scientific staff member, to a directorship of the same Institute.

> i'm now trying to change! I'm not a technician and i'm not going to be a technician'.

His role within the department had become circumscribed by a particular instrument the department possessed. Soon everyone was asking him to help them use it, and he spent a most of his time assisting other scientists with their projects. Although his name then appeared among the list of co-authors on the ensuing posters and publications, as a 'technique-oriented guy' he was never handed the 'trump card': final author status.[45] The problem was that, although contributing technically, he was 'part of someone else's piece of cake' and 'not defining his 'own piece of cake', as he puts it.

Several months later and the colour of Leo's world has taken on an entirely different hue. When I ask him what his future plans are he sounds confident and optimistic.

> 'I will stay in this city probably. It looks very promising. From the last time we talked there are now lots of projects that are really taking off. The technique is becoming more and more a part of the department's life, but it looks promising, because now I am carrying out the scientific part of the application of the technique.[46]

He goes on to explain how this change came about.

> 'In my case it is very exciting, because I managed to integrate what I was doing before, into the framework of the work at Max Planck. With all the experience I had, I managed to convince (the director) of a nice project. So there are several things that I am just publishing now,

45 In the political order of inscription this is the person who purportedly contributed the 'principal intellectual input' to the experiment.

46 This participant uses the expression 'it looks promising' on several different occasions throughout our conversation. He is a very different fellow from his former self.

> where (the director) is not the co-author. Now, the plan is to be surrounded by a few students, and to go for some big applications. So hopefully in the next three years I will be able to compete for some kind of nice position at a university'.[47]

This is the best constellation of activities a senior scientist could wish for. Although remaining under the umbrella of the department, he is being given the tools with which to fashion his future (students around him, independent publications, the encouragement to apply for large grants). As he says, in the next three years he will be 'able to compete'. For those senior scientists who do not have these tools, and carry out work much closer to the director, competition appears a far more daunting prospect.

vi) Senior scientists and precarity as dependence

One of the aims of this chapter is to show that precarity is a 'transversal concept' (Neilson and Rossiter 2008: 64): at which affects, ontologies and socio-economic conditions intersect. All of these different registers resonate with the experiences of Max Planck scientists. Nevertheless in this penultimate section, I take precarity's transversality along a line it very rarely goes. Here I rely on Lauren Berlant's understanding of the term as 'at root...a condition of dependency' (2011: 192). She reminds us that the etymology of 'precarious' originates in seventeenth-century leaseholds, to signify land 'held or enjoyed by the favour of and at the pleasure of another person' (OED 2013).[48] It is this medieval meaning – bringing precarity right back to the simplicity of contractual relationships between human beings – that takes us furthest in outlining the MPG's precarity principle. Whether they are there permanently or not, whether their patronage comes from the Society or third-parties, every scientist in the Society is present 'at the pleasure of' the director. It is the latter's scientific vision which defines the character of the department, and all work undertaken

47 Several details of this pronouncement have been obscured to ensure anonymity.

48 http://www.oed.com.libproxy.ucl.ac.uk/view/Entry/149548?redirectedFrom=precarious#eid

must bear some relation to it. The reason to embed this argument within a discussion of senior scientists, is that it is among this group that precarity as a state of dependency is most vivid.

It is visible at first glance from the haziness of their roles. I do not assert any kind of analytical distinction between 'postdocs', 'independent researchers' and 'group leaders' – as I did with junior scientists – because at the upper echelons stratification starts to get extremely protean, and these roles may fold into one another or there may be mobility between them. Postdocs and independent researchers describe the circumference of their positions respectively as 'amorphous', 'not defined', or even 'kind of nothing'; while even group leaders will confess that when they assumed the position, they were not sure of what it 'really means'.[49] Indeed there are some Institutes which purportedly have completely 'flat hierarchies' – meaning simply that there is no distinction whatsoever at the senior level. A comparable polysemy is observable on the curriculum vitae of those current directors who were Max Planck senior scientists some years ago. There is a whole range of job titles they might have had, including 'scientific co-worker', 'scientific collaborator', 'academic staff member', 'scientific staff member' and 'scientific officer'. The variability of such labels shows how ill-defined personhood is (particularly in contrast to the very well-defined director) at the level just below the top. This is a conscious organizational choice, what former president Adolf Butenandt calls its 'internal flexibility' (1981: 278), which like most of its hierarchical distinctions, is rationalised in utilitarian terms (Sahlins 1976).[50]

Thus while the departments as a whole have an *explicit* hierarchical trinity of directors, scientists and technicians, and junior scientists themselves have fairly well delineated functions and titles, the social location of senior

49 The group leader position is often the most defined of the three, involving the ostensible 'leadership' of a small group of anything between four and ten Ph.Ds and postdocs. However, while the director is described as 'big', the group leaders are 'little'. In status they are not so dissimilar from postdocs or independent researchers; according to participants they are situated on roughly the same pay-scale.

50 Adolf Butenandt articulates this logic in his writings of the time, 'As the internal organisation of the institutes is not modelled according to any fixed formula, it can be adapted to varying requirements by organisational changes at any time' (1981: 278).

scientists is *implicit*. It is one which hinges on personal rather than impersonal relations. Two business scholars have explored the dialectic between these two kinds of social ordering, or what they call 'formal and informal hierarchy' (Diefenbach and Sillince 2011). In their typology 'formal hierarchy' is the transcendent, vertical, sometimes cosmological, but always official and overt kind we are most familiar with, in which members are given 'formal roles and positions'. Meanwhile 'informal hierarchy', is 'person-dependent social relationships of dominance and subordination which emerge from social interaction and become persistent over time through repeated social processes' (ibid: 1518).

Where formal hierarchy transcends individuals and their respective working relationships, informal hierarchy is – by contrast – entirely predicated on relative sympathies between members. By analysing a variety of empirical studies of organisations, the authors make three very provocative points. The first is that 'whenever formal hierarchy decreases, informal hierarchy increases' (ibid: 1517). In practice then, this means that the postmodern trend towards 'flatter' or even 'hierarchy-free' organisations is largely a conceit, because it is simply a substitution of the formal with the informal (ibid: 1515). The second point is that informal hierarchies tend to feed back into and entrench any formal hierarchies that may already exist. In this way, the informal hierarchy at the upper tier is still oriented around the formal primacy of the director, and will rest upon those who have favoured relationships with him. Finally, they argue that when hierarchy is ill-defined, it can in fact *hold a tighter grip*, as its silent character makes it more oppressive. All of these arguments reveal something about the predicament of one senior scientist, Adam.

Adam is in his 40s, and has been working in the department for several years as an independent researcher. In contrast to Leo, Adam never managed to convince the director of a 'nice project' in the area that he is interested in, and so rather than ascending to the position of group leader, he will be leaving at the end of the year. His imminent departure perplexes one of the Ph.D students he has worked with, who tells me separately why it seems so unjust.

> 'I think he is a good scientist, and he's very independent. I just don't understand why he didn't get a position as a group leader. No idea. While another scientist could be there for eight years, and I think the normal time to stay is five.[51] I was like – "What's this?" This is sometimes surprising. When you see people that are really good and really nice, and they have to leave. He (the director) gives the money so I guess it's up to him.'

Relative to other senior scientists then, Adam is in a position of 'subordination' with respect to the highly 'person-dependent' informal hierarchy. The latter remains based on the formal primacy of the director, who refuses to support Adam's independent niche as he does Leo's.

Those who are subordinate in a hierarchy, tend to see its limitations most clearly.[52] Because Adam has not succeeded in aligning himself with the director in a mutually beneficial way, he bears witness to all the hard edges of this hierarchical system.

> 'The reason I didn't fit into the Max Planck environment was this hierarchical structure that you speak of. You have a director who gives general directions but then meets with his deputies, and then they execute their director relationship with the Ph.Ds and postdocs, who then work with technicians. There is the tight control of the director, who is then tightly linked with his network of peers'.

He is implying that these 'peers' or 'deputies' are those senior scientists who occupy the top spots of the informal hierarchy (i.e. not him). Adam then goes

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51 He is suggesting that the 'soft maximum' of five years for any scientist, can in practice be extended at the behest of the director.

52 Meanwhile for those at the top, the vista from their vantage-point may appear as a flat landscape. It always those either in, or intimately aligned with, those in power, who make the strongest argument for social 'flatness' (cf. Chapter 4.v).

onto explain why the situation is problematic for senior scientists as a whole, what he calls the 'intermediate tier'. He begins from the perspective of the director,

> 'When you have fifty people in your group, you cannot interact with each of them individually. You introduce a layer, an intermediate tier, and the people who you introduce have a very difficult problem. They cannot do their own research because they have to fit in with other projects which are going on. And they are placed in a situation where they have to educate the next generation of researchers, they have to supervise.[53]
>
> So all the pressure is on the intermediate tier, who are there only three to six years after completing their degree. But up to ten years after completing your degree, they are expected to no longer be there. Because if you do get stuck there, there are legal issues and the MPI has to take you on as a permanent employee which is not going to happen'.[54]

Nonetheless it is important not to take such a critical perspective as universal. While Adam sees the effects of hierarchy in the difficulties faced by those in his position, another senior scientist might not. Leo, for instance, has much the same role, but in our second discussion takes a wholly positive rather than a negative slant. Because Adam is unfavoured by the director, all he feels is constraint. This is clear from the kind of imagery he appeals to when describing his position: terms like 'tight control', 'fit(ting) in', 'pressure' and 'stuck', all imply a sense of constriction. However, it is also true that another senior scientist may experience an equal and opposite sense of 'absolute freedom'. Senior scientists' articulation of autonomy thus always depends on their status vis-a-vis the

53 Again one witnesses symmetries with the predicament of associate professors and *Privatdozenten,* and their excessive teaching burdens in the late nineteenth-century.

54 These 'legal issues' relate to the *Wissenschaftszeitvertragsgesetz* already cited.

informal hierarchical order. This explains some of the wild inconsistencies which appeared in my field-notes in what I began to term as they surfaced, 'the paradox of hierarchy'. This 'paradox' is that to one member the system is declared to be 'completely non-hierarchical' while to another it is 'very, very hierarchical'.

Finally, as Diefenbach and Sillince argue, 'informal hierarchy' can in fact be more pernicious than its formal sibling because it asserts itself at a level below explicit articulation. This is clear at a seminar I give to the department Adam is a member of, during the discussion which follows it. We begin to deliberate on the function of scientists within the organisation. For the director, scientists are there simply to 'produce knowledge' which will then trickle down to society in some form of product application. Like other senior scientists who go unprivileged in the informal hierarchy, Adam takes a more sceptical view than the Panglossian idealism which is often presented by directors. 'Is that really realistic?' he asks. 'Or is the scientist working for Nature or the patent or whatever, which has nothing to do with knowledge'.[55] The director quickly overrides him. 'That's not science that's technology'. But Adam again, chips in. 'Are we really here to create knowledge, or is it to get our names on the papers and all kinds of different...', at this point the director interrupts his line of reasoning. 'That's a different story', he offers definitively. By now everyone is laughing in alliance with the director. Adam again pursues his argument. 'It may be very different, but I think it is very dominant in the context of the anthropology of science'. At this point, his alternate perspective is dismissed entirely, and the director simply carries on with a different remark as if the latter had never spoken.

At the time, I laugh too alongside the rest of the audience at this exchange, as it appears to us all that Adam is simply being contrary and perhaps rather silly. It is only long long afterwards when re-examining my notes, that the politics behind this event strikes me with a jolt. Adam is in fact presenting me quite clearly with a highly plausible alternative analysis of the situation: that the production of knowledge may be driven by self-serving goals, in which scientists

55 He means the UK-based journal 'Nature', rather than the natural world.

are more concerned with their career-paths than simple curiosity. However, the director dismisses this alternative so effectively that at the time it is rendered ridiculous. As even I in the role of ethnographer, was blind to the dynamics at work here, it seems unlikely that any of the rest of those laughing were conscious that a particular social relationship was being enacted. As a loser in the 'informal hierarchy' which hinges on his personal relationship with the director, Adam is bereft of discursive authority; and this is made manifest in a way which is entirely tacit.

vi) Conclusion

In this chapter I have documented the scientific life at the MPG from a variety of perspectives. Beginning with qualitative descriptions of their transience, their multicultural consciousness, and their capacity for adventure and ebullience, I then applied quantitative methods to ascertain what the contractual basis of this personhood is, and how it came to be. Thereafter the discussion became more visibly oriented towards hierarchy, as I rose through the stratified layers of scientists at different ages and stages. On reaching the ‘top’, the comparative rigidity of the Society’s tripartite order became ever clearer, and previous arguments about the specific character of the hero principle supported from another angle. Embedded within these qualitative and quantitative records are the figures of Boris, Leo, and Adam. Each story was selected for its representativeness, its ability to stand for many others. They illustrate the diversity of the Max Planck experience, its winners and losers, and what winds of history carried them there in the first place.

Just as in chapter four I arrived at an alternative reading of agency, here I am in conversation with another analytic category: precarity. One of the difficulties in deploying precarity and its cognates, is the broad range of contexts and wide spectrum of political ends to which it has hitherto been applied. For Judith Butler, precariousness is both a common strain of the human condition, as well as a way of imagining the common psychic vulnerability of US citizens after the trauma of 9/11 (2004). Acknowledging human precariousness for Butler

is a critical pose, directed against the aggressive response of the US government to the attacks, and the American media's – and to some extent academy's – tacit support for that response. Meanwhile for Guy Standing and the European mayday movement, precarity is a way to theorize the sociological fall-out of labour market flexibility policies, and to rally this 'class-in-the-making' (2011: vii) together in nascent solidarity. Meanwhile for Kathleen Stewart, precarity is an 'emergent form' of writing culture (2012: 518): a mode of textual representation rather than an ethnographic entity in its own right. It becomes a way to reflect on her elderly parents' frailties, the non-place of the road, the transience of a crowd in a freshwater pool. Indeed, the ability of precarity to encompass the varying agendas of actors would make it a worthy object of analysis in itself. The popularity of the term in certain circles recalls Boyer's 'lexical totems' (2005: 39) of Germany's nineteenth-century middle class, and would render an intriguing account of shifting twenty-first century social constellations.

In spite of this concern, precarity remains a major pillar of my argument in the form of the precarity principle. Junior and senior scientists alike do participate in the condition of what could be called a precarious existence, which is produced within the logic of the organisation's hierarchy. It is one which delights in internationalism, in youth, in movement, and in the reliance of all upon the will of the one. The rational purpose of this logic is production: 'It's really a system geared towards productivity…people work their *ss off and then disappear and the whole thing's very efficient'. Like the Poles and the guest workers before them, this talented and youthful demographic are selected to meet the organisation's human requirements. Yet there is also a fundamentally cultural basis for this logic. As former president Adolf Butenandt once phrased it, 'It is and always will be the achievements of the individual which in the final analysis will lead the way to new knowledge' (1981: 304). The best way to assist this individual is then to make all of those around him, dependent upon him.

7. Conclusion

i) A study of hierarchy

I began this thesis with a critique of the popularization in organisational studies of what Eric Wolf has called the 'abstract individual' (2001: 333). This is the idea that organisations are populated by bland and inert subjects – like robots waiting to be switched on – who only need to 'act' to 'produce' what we can then come to recognise as society or culture. Channeling the Enlightenment invention of 'elementary man', the assumption is that any larger entity which exists beyond this basic form has to be self-consciously made: no making, no society or culture.

In contrast, my intention throughout has been to slide to the other end of the conceptual continuum, and to reassert the significance of an abstract whole. The thesis – in the original Greek sense meaning 'position' – is that this whole *is* the Max Planck Society which produces persons within itself along hierarchical lines. The overarching culture of the Max Planck Society is not produced by the actions of its employees, but rather is a concentration of particular configurations of value it has inherited from Germany's social, political, economic, and perhaps most importantly, cosmological and philosophical past. This ramifies in the present in producing a particular ontology of leadership, division of labour, and throughout, in asserting the value of charisma as a legitimate governing force.

To do this, I have relied significantly on the work of Louis Dumont – born the same year as the Kaiser Wilhelm Society in 1911 – who has been a constant intellectual companion. With regard to this German material, I have accepted several of his principal theses: the interdependence of hierarchy and holism, the differences between hierarchy and inequality, status and power, the existence of a predominant ideology or value-idea, and the dynamics of complementarity and encompassment. Yet if anthropology is an art then the 'inventive' act (Wagner 1975) has not been to bring Dumont's insights from

their Indian origin into a different context (more of which later) but to draw a fuller picture of what this partially suppressed hierarchy looks like from the material gathered. This is a different approach to the inventive act being located in the fusion of theory to ethnography, such as using Hegel's theory of objectification to understand processes of consumption (Miller 2005).

Theory then, has played a slightly different role here, to the one it has habitually played in the wake of the philosophical turn. The majority of the theory deployed in this thesis, has some form of independent relationship to the ethnography. I will spell out what I mean by this. The German Idealists (and their reformulations of Lutheran Protestantism) have been some of my key reference points for theorizing how the Society operates. Yet they are also in a causal relationship to it, as we saw at the opening ceremony of the KWG when the Kaiser invokes Wilhelm von Humboldt. The writings of Max Weber have been another reference point in theorizing charisma. Yet it is possible that Weber's incipient reflections on charismatic authority influenced the social structure of the KWG, being a peer of Adolf von Harnack, its founder. The Idealists were in a similarly causal relationship to the writings of Dumont, who purportedly was particularly inspired by Hegel and Herder (Appadurai 1988), when writing about hierarchy in India. The feedback loops continue. The Idealists were *themselves* enamoured with Indian philosophy: the idealist premises of the Bhagavad Gita and other Upanishads being a means for them to think through their own idealisms (Germana 2009, McGetchin 2009, Sedlar 1982). The bulk of the theory I have used is thus already in an extraneous historical tension with the subject of study. Of course one could say the same of post-'68 French philosophy, and organisations in France, America and the U.K – as Boltanski has shown (2005) – which have been examined by social scientists. Except commonly such theories are employed without their causal influence *on* organisational logics being simultaneously historicized.[1]

In interpreting the Max Planck Society as an abstract whole which orders persons hierarchically, the emphasis has been not on the interactions between

1 Anthony Giddens called this causal influence that academic ideas may exert on society the 'double hermeneutic' (1987).

individuals (that jostling open air market of spontaneous exchange relationships) but between principles. The defining 'structuring principle' of the organisation is of course the Harnack principle – as its members are keen to tell us – and which I have presented analytically as the 'hero principle'. Yet it is not simply the visible dominance of the hero principle that makes it the central key to unlock the social order. Here anthropological analysis really helps. In my view the most important ethnographic detail presented has been the use of tropes of fictive incest to describe the contravention of the hero principle, i.e. that the director should come from the outside and *ex nihilo* rather than from the inside as an inheritance. But what makes this so important is Levi-Strauss' insight that representations of incest form the very basis of relatedness. It is '*the* intervention' in the social order (1969: 32). Despite being rather different in their approaches, and of course one far more popularly accepted than the other, I cannot help but delight in bringing Levi-Strauss back together with his contemporary and compatriot Dumont. For the fact that incest tropes provide the very basis of relatedness is a perfect case for the collapse of the is and the ought. Incest, as the primary definition of what one ought *not* to do, becomes the defining opposition to what a society *is*. Inheritance is incest, thus the fact that the directorship is a non-inheritable position is the central pillar of Max Planck ontology.

So the first interaction I am conjuring here, slightly elliptically, is that between the hero and precarity principles. I hold that it is the defining centrality of the hero principle which produces the secondary logic of precarity: that this Platonic Philosopher Ruler's Guardian Auxiliaries should be dependent upon him for their professional wellbeing. Of course for the younger students this is less relevant. The very nature of studentship is a condition of dependence upon those from whom one is learning, so it is in keeping with what is commonplace elsewhere. However at the upper tiers this begins to look a little more idiosyncratic, and contains the potential for discrimination through an 'informal hierarchy' of senior scientists in or out of favour. I also wish to make the provocative suggestion that the interaction between the hero and precarity principles also plays out beyond the Max Planck Society's borders. The 'academic pyramid' of German universities has always, as Fritz Ringer says of the late nineteenth-century, 'tapered sharply at the very top' (1969: 54): with a

large cohort of younger lecturers employed precariously on temporary contracts, and a very small minority of professionally secure, *heroic* full professors positioned at an upper level, which is for most, out of reach.

Naturally if there are three principles that makes three sets of interactions, so we are left with precarity/longevity and hero/longevity. As should have been clear both ethnographically and theoretically, the relationship between precarity and longevity is one of complementarity as Dumont defines it. Both are, in a sense, antonyms although equally necessary to the social equilibrium. The technical staff are key and enduring repositories of specialist knowledge: whether how to prepare samples, how to use an instrument effectively, or of the protocols for how to treat and look after equipment and spaces so that the whole regime of scientific production runs smoothly. Scientists, having been rapidly apprenticed into this knowledge, then have the tools to produce data and to analyze it, transforming it ultimately into the stuff of scientific publications, before, in most cases, they leave the organisation for good. Their different functions within the organisation thus have a whole range of ontological effects, predominantly temporal. Meanwhile the relationship between the hero and longevity principles I have offered no real descriptions of, as technicians and directors do not appear to have as much contact with each other as scientists have with both. However, with more ethnographic research one might be able to take a Dumontian analysis yet further. There is a curious symmetry between the hero and longevity principles, the hero of course being a position of longevity too. Between them there is similarly inchoate evidence for what Dumont would call a 'reversal' (1980: 281): the director being first a charismatic individual, and secondly the member of a community, and the technicians being first members of a community, and secondly charismatic individuals in their own right.

In their introduction to a journal special issue on 'Value as Theory', Otto and Willerslev describe two ways of conceiving of value (2013). The first is the classic exchange theory model, in which value arises from processes of interaction: the 'production-oriented' perspective which, as Robbins says (2013: 100), has never gone out of fashion. The second however, is a conception of value as arising from within a cultural world which then informs the actions of

those who inhabit it. The latter is implicitly tied to Dumont's intellectual legacy, and has undergone a 'long period of neglect' (ibid: 99) which may now in fact be coming to an end. It should be self-evident that my optic throughout has been on their second definition. Yet such an optic always begs the question of where value comes from if it is not produced through action. Here the role of history in the thesis has been important. In order to understand where the Max Planck Society's gets its 'ideas and values' I have looked to Germany's past – not of course, as an essential unique bounded entity, but one which has been formed in a relation of complementary genesis and schismogenesis with Europe and the world. Its history of ideas, of religion, of scholarly institutions, of foreign labour, even of monarchism have all been summoned to testify to a set of ideas and values which reverberate in the contemporary life of the Max Planck Society. It is through history that I have explored and explained its difference.

To conclude this first section, I shall attend to its title, and sketch the way in the thesis contributes not only to the study of organisations, but to the study of hierarchy in general. A perspective has been presented here which to my knowledge has not been theorized elsewhere: that hierarchy is not simply a question of staggered religious status, nor purely political ranking, but is increasingly, a system of differentiated *temporalities*. The fundamental difference is not between those who are given 'agency' and those who are not, but of those who get to stay and those compelled to leave: of those permitted future imaginaries, and those living in an interminable present. The rise of the latter has become a particularly pressing issue among the professional classes. Barley and Kunda explain, that in the 1990s U.S corporate downsizings were more likely to 'target managers and professionals than they were blue and lower white collar workers': meaning that by 1997, an estimated 23% of all contingent workers in the U.S were from technical and professional occupations (2006: 10-17). Academia specifically has also become a particular locus for this: with an increased use of temporary 'teaching fellows' in British universities, and 'college adjuncts' in the U.S, the latter now attracting its own scholarly attention (Chibnik 2010, Nelson 2010, Professor X 2012). However, nowhere has this condition of impermanence been theorized as a secondary effect of new or enduring hierarchies, which is what I have done here.

Finally, any contribution to the study of hierarchy must state its position vis-à-vis the subject's main advocate, Dumont. While as I have said, Dumont has been my intellectual companion throughout, as a thinker I could always trust to offer surprising and radically original arguments – he had an enduring obsession I could never truck with: the opposition between individualism and holism. As with all big ideas, this obsession must have come from a very personal place. It has often been said that Dumont sublimated a longing for hierarchy into his work, but my instinct is that it is a more basic longing for holism, for a condition of belonging, for being a subjective after-effect of something bigger than himself. Perhaps a biography would reveal his own experiences of alienation, of a nausea for contemporary European culture generated by the feeling of being its outsider (as a perspective on ideology is only possible from a position of relative exteriority) a feeling which must only have intensified as the study of hierarchy became so totally subsumed within hyper-individualist alternatives. Interestingly, it is with respect to the German material that Dumont appears most tantalizingly close to abandoning his defining proposition. While beginning *The German Ideology* dismissing the imbrication of individualism and holism in German thought as 'mixed up, confused' (1994: 25) (i.e. confused only with respect to his own dogma), he ends by ceding that 'All in all, the opposition between individualism and holism is not immediately – say, in the first degree – applicable in Germany' (ibid: 191). This is as close as we get to an admission of intellectual error, any further and he would have had to undermine the central premise of his most famous work. My argument by contrast – much like Rio and Smedal's alternative dyad of totalization and detotalization (2009) – has partly been an effort to hammer another nail into the individualism/holism dichotomy. The Max Planck Society is a hierarchy/whole expressed *through* individualism. A single self encompasses a world, with which it is isomorphic, within it. A director *is* his department, the directors *are* the Institute: the individual is a whole, and the whole, an individual.

ii) In comparison

A claim was made at the beginning, that I would use the ethnographic material to think comparatively, rather than ending with some statement of cultural particularism. Now is the time to make good of that claim. However I should point out – as I hope the reader has noticed – that each chapter regarding personhood was already either explicitly or implicitly comparative in content. This was most obvious with Chapter 4 and the directors. The dominant comparison was to the big-man systems of Melanesia, as another kind of leader who embodied their community and injected their personality into it. Yet there were also other comparisons, and – equally important – contrasts, to kingships, to great men, and in passing to the economic elite of Veblen's leisure class. Such comparisons enabled me to paint a portrait of heroic headship: a form of leadership which is only unique in its peculiar concatenation of similarity and difference to other types. Chapter 5 and the technicians also hinged upon a comparison. The enduring question was how to explain one of those instances of feeled-work, in which the technical staff seemed to occupy a fundamentally different social location to those I had encountered in other ethnographies of science. The comparison here was between Germany and the rest of Western Europe and America. Chapter 6 meanwhile, contained the most global comparison, precarity being a condition experienced world-wide. Again I sought to identify the particular form that precarity takes inside the Max Planck Society, returning to its medieval etymology to theorize it as an after-effect of the hero principle. In this final section however, I will engage in two further comparisons: first between hierarchy as it has developed in Europe and America, particularly Germany, and hierarchy in those non-Western contexts where it has been studied by anthropologists, and ultimately, a broader comparison between Germany and the rest of Europe, particularly Britain.

In many non-Western societies, hierarchy remains the accepted discourse through which social relations are articulated, one derived from kin relations. This is true for parts of Africa (Warnier 2007, Brempong 2000) but particularly in Polynesia, which in general maintains what Ingjerd Hoëm calls, 'a sense of place' (2009: 247): where the status derived from one's kin location is the

dominant organizing frame of social life. The islands of Tonga and Samoa are often cited as examples of hierarchical societies: Tonga still being governed by thirty or so noble families and indeed a king (James 1997) and Samoa by titled chiefs (Macpherson 1997). Firth's early twentieth-century study of the Tikopia is also a classic example of a kin-based hierarchy. Firth's Tikopia was bifurcated into chiefly families and commoners, the former's preeminence arising from their superior religious status. Among these chiefly families were four 'clans', with four chiefs to represent them. The four chiefs (and thus their clans) were also ranked in order of their proximity to the gods: the highest chief/clan, the *ariki,* the closest to the gods and therefore of highest status.

In contrast to Western societies, divisions of labour in Polynesia have traditionally been of peripheral rather than central importance. As Firth says of the Tikopia, they have a 'concept of labour as being without special dignity but as obligatory on every person' (1957: xxi). Meanwhile Hocart notes something similar in Fiji, remarking that Fiji does not have 'such strongly marked differences of vocation'. He draws a stark contrast with his native Britain to illustrate his point, 'a Fijian carpenter is the companion of his chief. An English carpenter belongs to the proletariat' (1970: 294).

As I see it there are thus two major points of divergence here – ideologically at least – with ideas about hierarchy as they have developed in Europe since the eighteenth-century. Firstly, a former hierarchy of kinship characteristic of the *ancien régime*, began in the early modern period to transmutate into a hierarchy of work oriented around Lutheran ideas of vocation. This of course, was particularly true in Germany. The dissemination of Luther's precepts gave work a 'quasi-sacred status in the Protestant Enlightenment' (La Vopa 1988: 139), so much so that by the end of the eighteenth-century, people were identified not by family or birth but 'by their function in a social division of labour' (ibid: 138). The Nobility existed into the nineteenth and twentieth-centuries, but became increasingly socially redundant and ideologically illegitimate, before effectively 'vanishing' along with the end of the monarchy in 1918 (Himen 2008: 55). Secondly – a theme to which I have devoted hundreds of keystrokes already – hierarchy in late twentieth-century Europe starts to be

negated completely as a legitimate organizing principle. Anything which was not explicitly 'flat' was presented as inhumane and undemocratic. As Deleuze and Guattari once argued, the tree of hierarchy is 'not a method for the people' (1987: 8) and the only acceptable alternative formal heterarchy.

Of course in the last few paragraphs I have been referring to hierarchy as it gets discussed and spoken about, of its position within social ideologies rather than necessarily a set of practices. This is an important distinction to make, as ideologies while being productive of social life, is also belied by it. This is as true for the non-Western world as it is for Europe and America. A couple of examples will serve to demonstrate this. In Fiji, despite maintaining a kin-based hierarchy ideologically, Toren describes the 'elective element' (2000: 118) within the Fijian chiefship which militates against one chiefly dynasty wielding dictatorial authority. Meanwhile Brempong argues that 'within the framework of hereditary matrilineal succession to stools' among the peoples of central and south-western Ghana, there is an increasing trend towards the appointment of educated professionals or businessmen as stool occupants (2000: 75). Ideologies which maintain the formal precedence of hierarchy and kin relations, may in fact prove egalitarian and occupation-oriented in practice.

But my main interest is in how these ideologies get contravened in the West. One could make the point with a fair degree of confidence, that when in the latter quarter of the twentieth-century, hierarchy was increasingly repressed on the discursive plane, it in fact became proportionately virulent on the actual. New inequalities emerged surreptitiously through new flows of capital. A transnational elite was created, what Susan George has called the 'Davos class' (2010: 7): who paradoxically justify their own financial preeminence through the language of egalitarian ideology and its emphasis on individual merit, while ensuring their status endures for generations through trust funds for their offspring and the buying up of assets, in short, what in reality becomes another kinship hierarchy. The discursive suppression of hierarchy over the last forty of so years thus proves one of Antonio Gramsci's most famous points, that the most powerful forces in society are those enshrouded in silence (2011). It is only

therefore by reinvigorating hierarchy as an analytic category, that we may paradoxically have the tools to undermine some of its uglier expressions.

However, it is important to point out that formal hierarchies do not have to necessarily *be* ugly. What those moralizing postmodernists, for whom hierarchy fails to accommodate 'human needs' (Iannello 1993: 21), always neglect to acknowledge, are the ways in which hierarchy can serve a prophylactic function, insulating social groups against the deadly silence of 'control' (Deleuze 1992). It may seem counter-intuitive, but among the technical workers, it is precisely the explicit and clear-cut nature of their functions within the organisation that gives them their autonomy. That difference that is so challenging for me to transcend, protects them. On the other hand, the vagueness of the senior scientific role in a formal sense, as exhibited by their range of job titles, and more recently by that new and vulnerable tranche of scientists appearing in the statistics 'outside staff appointment scheme', leaves them *more* exposed to the inclinations and preferences of a particular departmental director. Diefenbach and Sillince's provocative claim, that 'whenever formal hierarchy decreases, informal hierarchy increases' (2011: 1517), should be uttered within earshot of those heterarchical utopians, who maintain that if the formal designation of roles and functions are abolished, then so too are all forms of social asymmetry.

Finally I would like to place Germany and the MPG in tension with the rest of Europe and America. The most obvious difference the MPG reproduces is Germany's residual hierarchical ideology. Whenever I explained the nature of my project to non-specialists ('a study of hierarchy in a German organisation') my interlocutor would invariably respond with a quick nod and some pithy statement such as, 'That's a good place to study hierarchy', or 'Nobody does hierarchy better than the Germans'. It is widely acknowledged that hierarchy still has a place in Germany, despite having been long since banished elsewhere.

This thesis has been an endeavour to demonstrate and explain this anthropologically, to show that it is a consequence of the fact that Germany had a slightly different Enlightenment – a Counter-Enlightenment – which retained the

philosophical holism abandoned by its Western European equivalent. A retention of the idea of the whole, was a retention of the idea that persons were produced therein, rather than the other way round, creating the logical possibility for what can be defined analytically as hierarchy rather than stratification or inequality. In the Max Planck Society, this hierarchy is formally expressed as an encompassing monism, in which a community is encompassed by a leader; all the while being actually expressed as a tripartite structure, in which the 'community' is itself divided into two distinct complementary groups. Such a subtly different understanding of what persons and groups consist of that has enabled me to critique some of the tacit assumptions which have permeated the study of organisations in recent years, and illustrate the ways in which a German organisation makes a different kind of sense of itself than others in Western Europe and America.

Despite hierarchy being a commonplace expectation, I hope that within this, what I have presented is a surprising picture of how hierarchy is realized in Germany's great 'basic research' organisation. Certainly, one would not anticipate 'charisma' to be a predominant ideology there, particularly from the perspective of the UK. German persons, until very recently, have been popularly represented in Britain as machine-like: hackneyed terms such as 'clinical' 'disciplined' and 'ordered' rolled out to describe them. The metaphor of the machine is the ultimate other (Richardson 2013), and these representations were thus always tacitly a symbolic means of depriving German persons of their humanity. I have come to understand this, with the help of Paul Gilroy, as a consequence of the twin legacies of a World War Two victory and a post-colonial 'melancholia' (2004): in which Britain dealt with the traumatic loss of Empire through a perverse focus on its defeat of the Third Reich. Representations of Germany have therefore been tools in the production of British national mythology. Of course, the Euro-crisis has realigned the balance of power. The winds of change blow through once more. Germany's economic dominance of Europe (Beck 2013) has inaugurated a greater appreciation of its humanity: whether the 'Protestant Leisure Ethic' (Oltermann 2012), or its fair treatment of workers (Sandbrook 2013). By presenting the Max Planck Society as a charismatic organisation I hope that I too have shown the profoundly human

logic which has a place there, even if this comes with its own forms of instrumentality.

It seems fitting to end the story with some final remarks from one of its directors, who virtually enacts a Dumontian interpretation of Germany and the MPG, with all its rhetoric of values and the performance of contrastive definition.

> 'The Max Planck Society is very different. How should I say? It's our social and cultural heritage. Germany is a socialistically-organised country, as is Japan. And I can clearly define it, it depends on the societal value system. The German system but also the Japanese, we are traditional fighter societies. And England *was* the same. Who is the hero? It's Ivanhoe, a knight: clean, measured, no money of course, a white horse and a deep love for his queen. We love this metaphor.
>
> Now England is essentially run by the banks. Your main values are economic. It is strange but indeed the fiscal balancing governs your cultural values. Which for me is crazy. It is crazy for many Englishmen of course. But think about London as such. It was an empire. It was a fighter culture. There was a time of wars when soldiers were heroes. Now I would say your heroes are the banks. Indeed English society became extremely successful because of the Empire, and of course all this trade from the colonies brought businessmen into a controlling position in your society. This defines societal values and these societal values reflect back into science. It's very clear.

> In Germany it's more like soccer. You pass the ball, forth and back, and the quicker you pass the ball to each other, the higher the probability that you win. And this is why I have to say Englishmen are very good at team sports. Soccer is a national sport. Which means that these so-to-speak 'do-it-together' values are still there. Below this shell of being rich is everything, you still have the much older traditions. Science is a two-player pass for us. To choose a team of ten people and then to accomplish a goal together. This is very very typical of the German society.
>
> And directors are chosen persons. Very simple. Who are elected by their peers but also by the group, to run such an operation in the most effective manner. We are the heroes of the era where fighting with weapons is not allowed anymore. It is a Romantic idea. We sacrifice ourselves for the beauty of science. But already when I say those sentences it is clear that it's the same driving force, going for the unknown, the beyond, like Christopher Columbus. These are guys we appreciate. To serve the society you go to unknown frontiers. All this pathos, it is the pathos of a fighting society. I understand myself as a servant of society. I am not a king, a monarch, I am first and foremost a servant. This is my understanding of my job.'

Of course this director is offering a highly situated perspective. Germany is as dependent on global finance and trade, and the 147 transnational companies that control it (Vitali et al. 2013), as anywhere else. The truth value of this testimony lies in its articulation of the vantage-point from which he is speaking as one of the Max Planck elite. He is emphasising that there is an older, medieval, heroic tradition which has persisted there. Organisations hold pieces of cultural history inside them, reproducing them quietly, while society at large may

continue to change and to homogenise. The logic of the Max Planck Society continues to reject the commensurations driven by the proliferation of exchange-value. And long may it continue to do so.

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